

# THE DANUBE IN PREHISTORY

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IN THE UNIVERSITY OF EDINBURGH

OXFORD  
AT THE CLARENDON PRESS

1929

OXFORD UNIVERSITY PRESS

AMEN HOUSE, E.C. 4

LONDON EDINBURGH GLASGOW

LEIPZIG NEW YORK TORONTO

MELBOURNE CAPE TOWN BOMBAY

CALCUTTA MADRAS SHANGHAI

HUMPHREY MILFORD

PUBLISHER TO THE

UNIVERSITY

Printed in Great Britain



## P R E F A C E

IN Great Britain there is one large group of workers engaged with the antiquities of the Ancient East, the Aegean, and Italy. There is another band whose energies are devoted to the archaeology of Britain. The two schools work very nearly in water-tight compartments, largely because their domains are widely separated in space. Britain undoubtedly absorbed influences from the Eastern Mediterranean long before Caesar landed, but those influences were for the most indirect. The missing links lie in the Iberian Peninsula or the Danube valley. The object of this book is to bridge part of the gap between the Ancient East and barbarian Britain in so far as their interconnexions are to be found in the valleys of the Danube and the Rhine.

*The Ancient  
East and  
Britain*

The area to be covered by this work is rich in prehistoric remains, rich with a wealth hardly dreamed of in this country. And those remains are often invested with especial interest by the light they throw on phenomena familiar in the Aegean or Anatolia. A characterization of the area from a geographical standpoint is given in the first chapter. Here we have to define a few geographical and archaeological concepts.

There is a large unitary area that for the last thousand years (with a few intermissions) has been known as 'Hungary'. It is at the moment divided between Yugoslavia, Roumania, Subcarpathian Ruthenia, Slovakia, and Hungary. Archaeologically as physiographically the area in question has often to be referred to as a unit. It would be tedious on every such occasion to repeat the names of the several States that at the moment hold bits of this unit; adequate compound words are foreign to the genius of our language. Hence the old historic term 'Hungary' has been retained, and the unstable boundaries, existing in 1927, have been as a rule ignored. So, too, for the benefit of audiles like myself the old pronounceable names have often been retained for places that in 1927 have been decorated with diacriticals. Sites are in all cases spelt in accordance with the familiar usage prior to 1918. The three or four current equivalents for the recently annexed towns are given in the index, save that in the Magyar territories at present held by Roumania the new names have been ignored.

*'Hungary*

A word or two must next be said on archaeological concepts. We find certain types of remains—pots, implements, orna-

*'Culture'  
and  
'people'*

ments, burial rites, house forms—constantly recurring together. Such a complex of regularly associated traits we shall term a 'cultural group' or just a 'culture'. We assume that such a complex is the material expression of what would to-day be called a 'people'.<sup>1</sup> Only where the complex in question is regularly and exclusively associated with skeletal remains of a specific physical type would we venture to replace 'people' by the term 'race'.

*Movements of people* The same complex may be found with relatively negligible diminutions or additions over a wide area. In such cases of the total and bodily transference of a complete culture from one place to another we think ourselves justified in assuming a 'movement of people'.

*'Relations' between cultures* At other times one or more elements of one culture reappear in various places in a more or less different context. In such cases we assume the existence of some sort of 'relation' between the respective areas or cultures. As a methodological principle every agreement must be assumed to denote some sort of relation and, as such, to be a challenge to the prehistorian. In practice, the significance attachable to correspondences must be admitted to vary. Abstract common traits—'the polishing of stone' or 'the practice of agriculture'—are very much less illuminating than concrete agreements—a definite type of stone implement or the cultivation of a specific grain. And the intimacy of the relation disclosed varies in proportion to the specialization and rarity of the type in question.

*Survivals* The nature of the 'relations' subsisting between cultures cannot usually be defined with any precision. But two main types may be distinguished according as the time factor does or does not intervene. In the first case the traits common to different areas may represent survivals from one former culture that has been at different points in its one time territory overlaid by distinct new cultures. So correspondence in the horn work of remote neolithic provinces may be interpreted as due to survivals in each of an epipalaeolithic tradition.

*'Influences'* Where such survival is excluded, in particular where the two cultures are juxtaposed in space and time, we have to invoke 'influences'. This word has only a minimal connotation. It may mean actual movements and mixings of peoples, inter-tribal barter, imitation, or some other form of contact. Often it is merely a confession of ignorance, and in no case must it be

<sup>1</sup> As the adjective from 'people', corresponding to the German 'völkische', we use the term 'ethnic'.

taken as an explanation. Where any indications are available to guide us, we attempt to give 'influence' a precise meaning in concrete cases. It is plain that 'influences' do not travel *in vacuo* any more than influenza germs. They denote actual contact between peoples. But that contact may be anything from conquest or federation to friendly visits between neighbouring chiefs or the 'silent trade'.

*Methods of diffusion*

However, some things denote a real change in the habits of a people: such would be above all the adoption of a new style of pottery or of a new weapon when the superiority of the latter over traditional forms was not guaranteed on its face. Influences disclosed in agreements, affecting the whole habits of a people and not obviously dictated by practical motives, are almost certainly to be interpreted in ethnic terms, using 'ethnic' as the adjective from 'people'. On the other hand, no such significance need attach to the spread of an obviously superior device (e.g. the cut-and-thrust sword) or a new fashion in hair-pin (among peoples who wore hairpins). Such denote external relations—trade or imitation. External relations are further disclosed by all accidental agreements. We term an accidental agreement the sporadic occurrence in one culture of types proper to another. An agreement would still be accidental, even if the foreign object was occasionally imitated locally, so long as it was not appropriated and made a part of the receptive culture.

*Total relations*

*External relations*

*Accidental agreements*

Having defined the meaning of 'culture' and considered its relations in space, it remains to examine chronological relations. Plainly culture as defined above is not necessarily a chronological concept. Even in one place a culture might persist for a long time. In any case, the same culture might appear in one place at a given time and reach another place very much later. Generally, however, some accidental traits would be discoverable to betray the discrepancy in date.

*'Culture' not a chronological unit*

For determining the sequence of cultures or the development of one culture at a given site or in one small area the only certain method is stratigraphical observation. In a few rare cases geology comes to our aid instead: while the Baltic was sinking or its shores rising, the coastwise distribution of types characterizing later cultures is wider than that of older cultural types; the later objects could come down farther toward the present line because the coastline itself was lower.

*Stratigraphy*

Where stratigraphical or geological evidence is lacking, we must have recourse to typology. This depends on the assumption

*Typology*

*Conditions for valid use* tion that types evolved (or degenerated) regularly. It is only valid (1) when several series whose various terms can constantly be correlated are considered together, (2) when two or more terms are somehow fixed in the absolute time series, and (3) within a single culture or in an area of continuously inter-related cultures.<sup>1</sup> Even with these reservations typology yields a very abstract time sequence. In parts of Europe twentieth-century electric light and a pre-Roman oil lamp are in regular use by communities living only two or three miles apart.

*Synchronisms* The correlation of the relative sequences obtained by the above methods in distinct areas is possible (apart from rare cases where geology can be invoked) only in so far as 'external relations' subsist between the several areas. The occurrence as an accidental trait in cultural group A of a type characteristic of a specific phase of culture B affords a strong presumption of synchronism. This presumption becomes a certainty if equally distinctive types belonging to the same phase of group B occur as accidents in the appropriate phase of culture A.

*Absolute chronology* Absolute chronology can only rest on the establishment of such synchronisms between Continental cultures and the historically datable phases of Aegean, Egyptian, or Mesopotamian civilizations. In fact, datable Aegean or Anatolian types do occasionally appear as imports in a specific context in Central Europe. More rarely these synchronisms can be controlled by the appearance of Danubian types in a datable context in Greece or the Ancient East.

Dating by Aegean connexions is only possible during a relatively limited period. The Old Stone Age and part of the succeeding epipalaeolithic epoch lie outside the framework of the Egyptian calendar. Whatever *genetic* relations may be detected between early neolithic types in the Danube valley and those of the Aegean, they allow of no synchronism for reasons already adduced. It is first in the 'Copper Age' that 'external' influences from the Aegean make themselves felt. Absolutely unimpeachable evidence for a reaction of Central Europe on the latter area is not older than 1100 B.C., however much it be suspected earlier.

*Plan of the work* In the present book the exposition will be based as far as possible on cultures in chronological order. An attempt will be made to set forth the main traits of each complex as they are revealed by actual closed finds; the evidence for relations with other cultural groups and especially with the Aegean will

<sup>1</sup> e. g. London and New York, but not London and Lhasa.

then be stated separately, and the data on which the chronological position of the complex may be established and some speculations as to its origin will be added at the end. Maps are given to indicate the position of the more important sites, but few attempts have been made to plot distributions at all exhaustively. In the present state of our knowledge such maps would be only misleading. What they would show is not a real distribution, but the distinction between well-studied and virtually unexplored regions.

*Unreliability of distribution maps*

And here we must insist on the extreme unevenness of the archaeological exploration of Central Europe. Serbia is largely a blank, relieved only by one scientifically excavated site, Vinča (the results of whose excavation are still only provisionally published), and a little surface-scratching in the north and east. Bosnia is far better explored; the Iron Age barrows of Glasinac and the urnfields of the same date have been studied and described in a truly masterly fashion, but other excavations, carried out in the area, even at Butmir, leave much to be desired. In the neighbouring regions of Slavonia, Croatia, Carniola, Styria, and South-Western Hungary excavations that conform to modern requirements have scarcely been attempted at all, and in several areas, particularly Slavonia and Styria, even the activities of the collector have been slight and the material published is almost negligible. The Hungarian plain is another dark region. The museums of Szekszard, Buda-pest, Debrecen, and Nyiregyháza are crammed with wonderful material collected in the neighbourhood, but in all too many cases data as to stratigraphy or associations are unobtainable. A few chalcolithic and Bronze Age cemeteries have been quite satisfactorily excavated, but for the stratigraphical determination of the sequence of cultures we are forced to rely on results obtained at a couple of sites near Arad and at Tószeg near Szolnok. In Transylvania no scientific excavations of any importance are on record apart from the work of Dr. László in the Alt valley and a few cemeteries dug along the Maros. In view of its wealth in metals the condition of Transylvania is particularly deplorable. And the no less important hill-country of Slovakia and North Hungary, which must have been supplying most of the copper used in Central Europe from quite early times, is in a still worse plight. Not one first class site had been described prior to 1926, and comparatively few stray finds had been recorded or placed in accessible museums.

*Unevenness of exploration*



With relief we cross the mountains into Moravia where the archaeological record is peculiarly exact thanks especially to the work of Palliardi round Moravské Budejovice. The neighbouring regions of Lower and Upper Austria, on the other hand, are again sadly deficient as far as published finds go. But farther north, Silesia and Bohemia provide bright patches, though in the latter country there is still an immense amount of unpublished material both in the east and the south-west. Farther down the Elbe we have again to pass through a comparatively blank stretch in the State of Saxony before we reach the well-explored lands of Saxo-Thuringia, where the rich material in the well-arranged museums has been in most cases admirably described. Returning to the Danube basin we find rich museums in Oberpfalz and Lower and Upper Bavaria, only a fraction of whose content has yet been published, though in many cases it is derived from well-conducted excavations. The same remark applies to the Tyrol.

In Switzerland much material has been gathered and published, but it is extraordinary how difficult it is to arrange it in its proper context. But as soon as we come to the Rhine basin and South-West Germany we enter a region that like Silesia, Saxo-Thuringia, Central Bohemia, and Moravia has been thoroughly explored in accordance with the very best methods.

*Author's own journeys* The real gaps due to inadequate exploration have to some extent been increased by the limitations of the author's personal knowledge. There are many local museums, some often quite important, that he has been unable to visit, but he has studied the most important and typical, and has not failed to see at least one collection in each of the principal regions covered by this book. To enable the reader to discount the personal factor, a list of the museums visited is given here:

- Museums visited*
- |           |   |
|-----------|---|
| Serbia.   | †Belgrade: National Museum (Dr. Sarea). |
| Bosnia.   | ‡Sarejevo: Zeml. Museum (Dr. Petrovic). |
| Slavonia. | †Osijek (Dr. Celestin).                 |
| Croatia.  | §Zagreb.                                |
| Carniola. | §Ljubljana (Laibach) (Dr. Zupanič).     |
| Styria.   | ‡Graz (Dr. W. Schmidt).                 |
| Banat.    | §Vršac (Dr. Milleker).                  |
|           | †Temesvar.                              |
| Hungary.  | Szeged: †Varosi Muzeum (Dr. Mora);      |
|           | ‡University Museum (Prof. Buday).       |
|           | †Szekszard (Dr. Kovacs).                |

- Hungary. †Szombathely (Baron von Miské).  
 §Buda-Pest: A Magyar Nemzeti Muzeum (Dr. Hillebrandt); Geological Museum.  
 Kecskemét.  
 †§Debrecen (Dr. Zoltai).  
 †§Nyiregyháza (Dr. Kiss).
- Subcarpathian  
 Ruthenia. Munkacs (Munkačevo): Lehoczky Collection.
- Roumania. Nagyvarad (Grosswerdein).  
 †§Arad: Kulturpalota (Dr. Niki).
- Transylvania. †Sepsi-Szent-György: Székely Nemzeti Muzeum.  
 Kronstadt (Brassó) (Dr. Julius Teutsch).  
 §Kolozsvar (Clausenburg): Erdelyi Nemzeti Muzeum (Dr. Roska).
- Slovakia. †Košice (Dr. Polak).  
 †Turč. Sv. Martin (Turocz Szt. Márton).  
 §Pressburg (Pozsony-Bratislava): City Museum; Gymnasium na Grösslingu.
- Moravia. †§Brno: Moravské Museum (Dr. Absalon and Dr. Červinka).  
 †Olomouc.
- Galicia. Krakow: Akademia Nauk.  
 Lwów (Lemberg): Museum Dzieduszicky (Prof. Kozłowsky).
- Silesia. §Breslau: Schlesisches Museum (Prof. Seger).
- Bohemia. Hradec Králove (Königgrätz).  
 §Prague: Narodni Museum (Dr. Stocký); Sbirka Jira (at Podbaba).  
 Plzen.
- Saxony. §Halle: Landesanstalt für Vorgeschichte (Dr. Niklassen).
- Lower Austria. Vienna: §Naturhistorisches Museum (Dr. Mahr);  
 Niederösterreichisches Landesmuseum; Urgeschichtliches Institut der Universität.
- Oberpfalz. Regensburg: Ulrichsmuseum.  
 §Nürnberg: Luitpoldmuseum (Dr. Hörmann).
- Lower Bavaria. Landeshut (Dr. Wolff).
- Upper Bavaria. Munich: Prähistorische Staatssammlung (Academy) (Dr. Wagner); National Museum.
- Tyrol. §Innsbruck (Dr. von Merhardt).
- Switzerland. §Schaffhausen (Dr. Sulzberger).  
 Zurich (Dr. Viollier).

- Switzerland. Berne (Prof. Tschumi).  
 Neuchâtel (Dr. Vouga).  
 Lausanne.
- Wurtemberg. Tübingen: Urgeschichtliches Forschungsinstitut (Prof. R. R. Schmidt).  
 §Stuttgart: Sammlung der vaterländischen Altertümer (Dr. Paret).
- Franconia. §Würzburg: Luitpoldmuseum (Prof. Hock).
- Alsace. Strasburg: Musée préhistorique et Gallo-romain (Dr. R. Forrer).
- Baden. Karlsruhe.
- Rheinish Palatinate. §Speyer (Dr. Sprater).
- Hessen. Worms (Dr. Koehl).  
 Mainz: Römisch-germanisches Central-Museum (Prof. Schumacher).
- Rhine Province. Cologne (Dr. Rademacher).

*Acknowledgements*

To the authorities of all the foregoing museums, but especially to the gentlemen mentioned by name, I am deeply indebted for many courtesies and much valuable help. Those marked with a † I have further to thank for permission to photograph and reproduce here objects included in the collections under their charge, while those marked with a §, as well as the authorities of the British Museum, Mr. C. Daryll Forde, and Dr. Schaeffer of Haguenau, have very kindly sent me photographs which I now gratefully acknowledge. I am much indebted to many kind friends and colleagues, both in England and on the Continent, who have helped my work in various ways. I might especially mention Mr. Forde and Mr. Louis Clarke with whom I had the pleasure of working in the field, Prof. Vassits of Belgrade, Dr. Márton the excavator of Tószeg, Dr. Tompa of Buda-Pest, Dr. Jan Eisner of Bratislava. The beautiful and understanding drawings of Miss A. M. Calverley have done much to make the text intelligible. Finally, I owe much to the Oxford University Press who have made possible the publication of this work by financial and other help.

The text was completed in September 1927, but owing to various difficulties final publication had to be postponed till 1929. The author has endeavoured as far as possible to incorporate material subsequently published, but naturally many books and articles had to be ignored and no analysis of new theories was possible.

V. G. C.

EDINBURGH, *February*, 1929.



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## NOTE ON PRONUNCIATION

The approximate English equivalents for certain Slavonic and Magyar sounds may be given as follows :

SYMBOL.	PRONUNCIATION.			
	<i>Czech.</i>	<i>Croat.</i>	<i>Polish.</i>	<i>Magyar.</i>
c	ts	ts	ts	ts
cs	—	—	—	ch
cz	—	—	ch	ts
č	ch	ch	—	—
ch	Scottish ch	ch	ch	—
gy	—	—	—	dj
j	y	y	y	y
ly	—	—	—	French <i>ll</i>
ň	ny	—	—	—
rz	—	—	zh (i.e. French <i>j</i> )	—
ř	between r and zh	—	—	—
s	s	s	s	sh
sz	—	—	sh	s
š	sh	sh	—	—
w	—	—	v	—
y	hard i	i	i	y (consonant)
zs	—	—	—	zh
ž	zh	zh	—	—
ž	—	—	zh	—

Serbian names have been transliterated into Croatian, save in the case of Vassits.



# I

## THE GEOGRAPHICAL AND CLIMATIC BACKGROUND

**T**HE valley of the Danube and its tributaries constitutes the shortest and easiest highway between North-Western Europe and the ancient centres of civilization in the Aegean and the Ancient East. On the east, south, and west, this corridor is fenced in by the rough and wooded ranges of the Transylvanian Alps, the Balkan and Illyrian chains, and the Alps. To the north there are no such formidable physiographical barriers. Three routes lead from the Danube basin to the great plain of Northern Europe. The broad valley of the March offers an easy passage through the Moravian Gate to the headwaters of the Oder and the Vistula and the wide lowlands. From the Upper Danube an easy crossing over the by no means precipitous Swabian Jura leads to the valleys of the Neckar and the Main and so to the Rhine. Beyond that river the Vosges and the French Jura again constitute a barrier on the west. From the Upper Rhine the Belfort Gap does indeed open a way to France, but physiographically the lakes of Western Switzerland are as nearly in touch with the Rhine, and so with Central Europe, as with the Rhone which rises among them. Northward the Rhine is the natural channel for intercourse. The Moselle valley, narrow and tortuous, provides but a precarious outlet westward (see map); the true path lies farther north round Cologne and Aachen or downstream to the North Sea.

*The  
Danube  
corridor*

Between these two main arteries lies a third route along the Elbe. The headwaters of that river are, indeed, separated from the Upper Danube by the forbidding Böhmer Wald, and from the March basin by an extension of that chain. The ranges are, however, in no case very high, and the passage from Moravia to Bohemia, on the north in particular, is not very difficult. Finally the Fürth Gap between Plzen (Pilsen) and Nürnberg (Nuremberg) leads from Western Bohemia to the Upper Danube and Main basins.

The lowlands of Bohemia, drained by the Moldau (Vltava) and the Elbe, are cut off from the northern plain by a series of mountain chains. These are pierced by two main gaps: the Glatz pass leading into Silesia, and the gorge by which the Elbe itself flows through a narrow defile into Saxony.

Thus the Danube constitutes a natural corridor which, divid-

ing into three above the great elbow of the river, leads ultimately from the Black Sea to the Baltic and the North Sea.

But neither are the walls of the corridor equally impenetrable at all points, nor is the corridor itself uniform in character.

*Ways of access to the east* Easy passes lead across the Transylvanian Alps from the Moldavian plains on the east, though the broken plateau of Transylvania and the ancient massif beyond it have to be crossed before the Danube valley is gained. The Maros valley provided a satisfactory path through this complex. Farther north the Upper Tisza valley is connected with the Galician plains by two easy passes through which the Scyths, the Avars, the Magyars, the Tartars, and other invading hordes have successively poured into the Hungarian plain. And north of the Moravian Gate there are no mountain barriers to the east comparable to Vosges in the west.

*Passes across the Balkans* Southward outlets, other than the Danube itself, are more rare. The Morava leads far south, and the divide between its headwaters and those of the Vardar presents no special difficulty; and once on the Vardar the road to the Aegean is open. Equally easy is the passage from the Upper Morava to the Maritza corridor between the Balkan and Rhodope ranges that gives access to the Black Sea and the Aegean. Finally, a possible but exceedingly difficult route leads from Central Serbia by way of the Ibor across the Kossovo plain to the Upper Vardar.

The Drina and Bosna lead from the Danube basin through narrow and precipitous ravines into a tangle of rugged mountains. The few streams that drain this high country westward, like the Narenta, often pursue a tortuous course through deep gorges in which the cliffs rise sheer from the torrent. All this region is painfully difficult, and no 'natural' routes lead across it from Central Europe to the Adriatic.<sup>1</sup>

*Routes to the Adriatic* The same remark applies to the passes from the Kulpa, the Save, and the Drave to the Adriatic. Though the mountain barrier is of no great height, the complexity of parallel chains and the ruggedness of the 'Karst' country makes it an unattractive region to cross. The narrowness of the gorges of the rivers themselves in several places must be remembered; they are waterways affording no regular land passage between the banks

<sup>1</sup> To cross the many parallel ranges into which the Bosnian highlands are broken can never have been easy. The passage from the Upper Drina to the headwaters of the Bosna by the present

railway route involves the negotiation of many narrow canyons carved out by mountain torrents that now swirl along at the very foot of the perpendicular walls of rock.

and the cliffs. Another practicable route to the Adriatic would be along the Upper Drave and the Etsch. The Upper Drave itself may easily be reached from the Little Alföld along the Raab valley and even from the Upper Danube by the low Semering Pass. The best connexion between the Upper Danube and the Adriatic lies, however, along the Inn valley. This leads to the foot of the Brenner, which gives access to the Po basin at an altitude of only 4,500 feet.

While its walls are thus broken, the continuity of the Danube corridor is itself interrupted more than once. The Lower Danube flows through the Walachian plains from the Iron Gates to the Dobrudja. The celebrated defile, easily circumvented on land by a route behind the Banat mountains, marks the limit of the huge Middle Danube plain. The greater part of the Tisza, the Middle Danube itself, and the Lower Save and Drave traverse this vast, gently undulating, plain bordered on the east by the mountains of the Banat and of Western Transylvania, and on the south and west by the Illyrian-Alpine chains. Northward the plain is interrupted by the sweep of the Carpathians and the other Slovakian mountains that swing round the headwaters of the Tisza and abut on the Danube itself above Buda-Pest; on the north-west its continuity is similarly interrupted by the Bakony range. This is separated from the southern end of the Carpathian bow only by the Danube, and constitutes a noticeable climatic frontier. But beyond it the plain continues as the Little Alföld, till it is closed by the easternmost spurs of the Alps—the Wiener Wald. Thereafter the Danube flows westward through a narrow valley which only opens out again above Passau. But between the Böhmer Wald and the south end of the Carpathians the March valley opens, as we have seen, a direct road northward.

Yet what gives its unity to the Danubian corridor is not so much its physiographical character as the nature of its soil. The early neolithic period was an age of warmth and moisture and consequently of great forests; valleys and foothills alike were heavily timbered. Now, primeval forest absolutely excluded all possibility of settlement by neolithic man, and must have been a serious impediment even to movement. But on the Danubian corridor and its branches are numerous tracts that would have been less densely timbered. These are the strips of löss. Löss<sup>1</sup> is a very fine-grained soil, probably wind-borne dust, deposited in an epoch of desiccation. It consists of

*The Danube plain*

*Mountain and forest*

*Löss*

<sup>1</sup> See *BUF.* v, pp. 1-11.

#### 4 THE GEOGRAPHICAL AND CLIMATIC BACKGROUND

very minute particles between 0.05 and 0.02 mm. in diameter, and has a peculiar capillary structure, due perhaps to the short-lived spring grass having pushed its shoots through each summer's layer of dust. As a result, the löss is porous and does not, like clay, allow water to stand. At the same time, it is easily worked, and thus in every way forms an ideal agricultural soil as well as being unfavourable to the growth of excessive forest. A glance at map I will show how, in what has been called the 'corridor', the patches of löss, linked by waterways, form an almost continuous chain over which neolithic man might spread. The mountainous borders of the corridor were at the same time so thickly wooded as to be almost impassable. The unity of the corridor lies in its character of a löss-way between virgin forests.

*Climatic changes* This picture is, however, true only for one special epoch—the 'early neolithic'. Recent researches have shown how, even in holocene times, the climate of our continent and hence its vegetation underwent manifold changes.<sup>1</sup>

*Boreal phase* In late pleistocene times the Alps and their foothills, North Germany, the Riesengebirge, and the Tatra<sup>2</sup> were covered with ice sheets. The lowlands were tundra or dry steppe on which the later löss was settling. This last glacial period was followed by a rapid amelioration of the climate accompanied by a rise in the tree line and the spread of forest vegetation. The climatic improvement reached its maximum in what has been termed by Blytt and Sernander the Boreal period, corresponding to Brook's Early Forest Phase. At this date the *Land* Baltic depression was almost completely cut off from the North Sea and was occupied by a series of virtually fresh-water lagoons, usually termed the Ancylyus Lake after the typical mussel that lived in its waters. The climate of Northern Europe was then rather extreme with a heavy winter rainfall and dry summers, but the mean annual temperature was higher than to-day. In Denmark forests of Scots firs, mixed with alders, hazels, elms, willows, and a few isolated oaks, flourished.<sup>3</sup> The fir and the birch spread over North Germany, the oak was already dominant in Central Europe, while the Scots fir and the yew had reached the Alpine slopes with the beech on their heels. The climate was, however, still too dry for the growth of regular vegetation on the sand dunes of Little Poland.

Subsequently, the sinking of the North Sea coasts allowed

<sup>1</sup> Gams and Nordhagen, *Postglaziale Klimaänderungen*.

<sup>2</sup> Schráníl, *Böhmen*, p. 3.

<sup>3</sup> *MSAN.*, 1926-7, pp. 14-29.

an influx of salt water into the Baltic depression which thus became filled with an inland sea of wider dimensions than the present Baltic: the frequency of the periwinkle gives the new sheet of water the name of the Littorina Sea. Partly as a result of this influx of salt water, the climate, at least in Northern Europe, became more temperate, warm, and moist. The beech reached Denmark and the Alps; the South German highlands were clad with oaks, white firs, and yews. The dunes of Little Poland<sup>1</sup> were immobilized by a growth of vegetation. This moist phase is termed Atlantic, and corresponds in Central Europe to the early neolithic epoch when the walls of the Danubian corridor were at their highest.

Eventually, the moist, forest period gave place to a second continental phase styled the Subboreal epoch. The average rainfall was less than to-day, the winters were severe, but the mean summer temperatures rose as much as 7° above the present average. As a result the dense forests of the Atlantic epoch thinned out; North Germany became a parkland, like Central Russia to-day in the zone between forest and steppe. Heathland<sup>2</sup> replaced forest in many areas, as on the Swabian Jura where the xerophile plants still survive. The Alpine lakes shrank; the Polish dunes shook off their carpet of vegetation.

In such circumstances the passes across the Balkans and the Alps became practicable. Large areas, previously overgrown, became available for settlement. Intercourse was facilitated on all sides. The Subboreal epoch was thus really the post-glacial optimum of climate for Central European peoples.

This (second) continental phase only reached its maximum in the Bronze Age and lasted into the first Iron Age. But early in the latter period the weather changed abruptly for the worse. The average temperatures fell below the present level, while the mean rainfall exceeded that of to-day. The catastrophic change in the environment occasioned serious unrest in the population, but now that men had iron axes the boundaries imposed by the forest were less insurmountable.

Not only does the 'Danube corridor' provide a way of communication between the Ancient East and the barbarian North; it contains on its borders and at its extremity natural resources that would draw men and goods from the lands of early culture along it. The map reveals the extent of deposits of gold, copper, tin, and salt.<sup>3</sup> The most important goldfields lie in western

*Littorina  
Sea*

*Atlantic  
phase*

*Subboreal  
phase*

*Mineral  
resources*

*Gold*

<sup>1</sup> Kozłowski in *L'Anthr.* xxxvi, p. 51.

<sup>2</sup> *BRGK.* xii, p. 30.

<sup>3</sup> See Heiderich, *Wirtschaftsgeograph. Karten u. Abhandlungen zur Wirt-*



Transylvania. Round Verespatak<sup>1</sup> the rock is honeycombed with auriferous veins, and there is an even richer field at the headwaters of the White Körös. Both were exploited in Roman times. On the Aranyos (Golden River) gold occurs as telluride, at Nagyag and Offenbánya. Alluvial gold has been won from the Körös, the Maros, and the streams of the Banat till recent times. The deposits in Slovakia, east of the Gran, are likewise important, but direct evidence of ancient exploitation is lacking.

*Copper* Of the copper ores the exploitation of various lodes in Salzburg and Tyrol in the Bronze Age is fully attested.<sup>2</sup> The rich lodes at Majdanpek in North Serbia were used by the Romans. Deposits in the Polje Mountains south of Valievo contain as much as 15 per cent. copper in pyrites and serpentine. Grey ore (Fahlerz) with a 30 per cent. metal content occurs at Maskara on the Vrbas. Of the Hungarian deposits the ores in the Mátra mountains are particularly rich (32 per cent.), while at Recsk native copper is known.

*Tin* Of all the minerals in our area the tin is the most interesting. Tin-stone is confined to the Fichtelgebirge and the adjacent Saxo-Bohemian Erzgebirge. It is neither plentiful nor easily worked,<sup>3</sup> but the weathered surfaces may once have contained alluvial 'pipes' now exhausted. Old tin-washings have been reported in the region, but they are not certainly older than the twelfth century A.D. Nevertheless strong presumptive evidence of prehistoric exploitation is afforded by the wealth of the Early Bronze Age graves and hoards in Bohemia and Saxony, where 'white metal' containing 27 per cent. of tin was freely used. On the southern side of the Erzgebirge the stanniferous rocks lie not far from the edge of the löss.

*Antimony* In addition we should note the antimony ores occurring near Szombathely and in Slovakia. This metal was used as a substitute for tin in Hungarian bronzes. The prehistoric cinnabar mines of Šuplja Štena in North Serbia and the adjacent deposits of galena also deserve mention.

*Amber* Finally, near the northern termini of the corridor's extensions lay the amber deposits of Jutland and East Prussia. The fossil resin may first have reached the Mediterranean by sea-borne trade along the Atlantic. But before the end of the local Stone Age beads of this substance were reaching Bohemia, and

*schaftskunde der öst.-ung. Monarchie*, Heft X, Wien (Handelsmuseum), 1919.

<sup>1</sup> The crude gold contains 27-33 per

cent. silver. *AE.*, 1907, p. 59.

<sup>2</sup> Andree, *Bergbau*, pp. 35-40.

<sup>3</sup> Andree, *op. cit.*, pp. 51 f.

in the Bronze Age it was regularly traded across Central Europe to the Adriatic.<sup>1</sup>

Hence our area not only was peculiarly exposed to penetration by Mediterranean influences, but commanded riches calculated to induce commercial relations with the South.

Before leaving the mineral resources of Central Europe, *Salt* mention should be made of the supplies of salt and certain rare stones likely to form the objects of intertribal barter and to attract settlement. The salt is derived from extensive beds left by a miocene sea whose deposits underlie our province. Springs saturated with salt rise in the Saale valley, in Franconian Wurtemberg,<sup>2</sup> in Upper Bavaria and Upper Austria, particularly round Reichenhall, and in Hungary, Transylvania, and Galicia. Rock salt was mined at Hallstatt and Hallein in prehistoric times. The ancient importance of salt is shown particularly by the many names in *Hal* (Halle, Hallstatt, Reichenhall, Halicz), the old Illyrian word for salt.

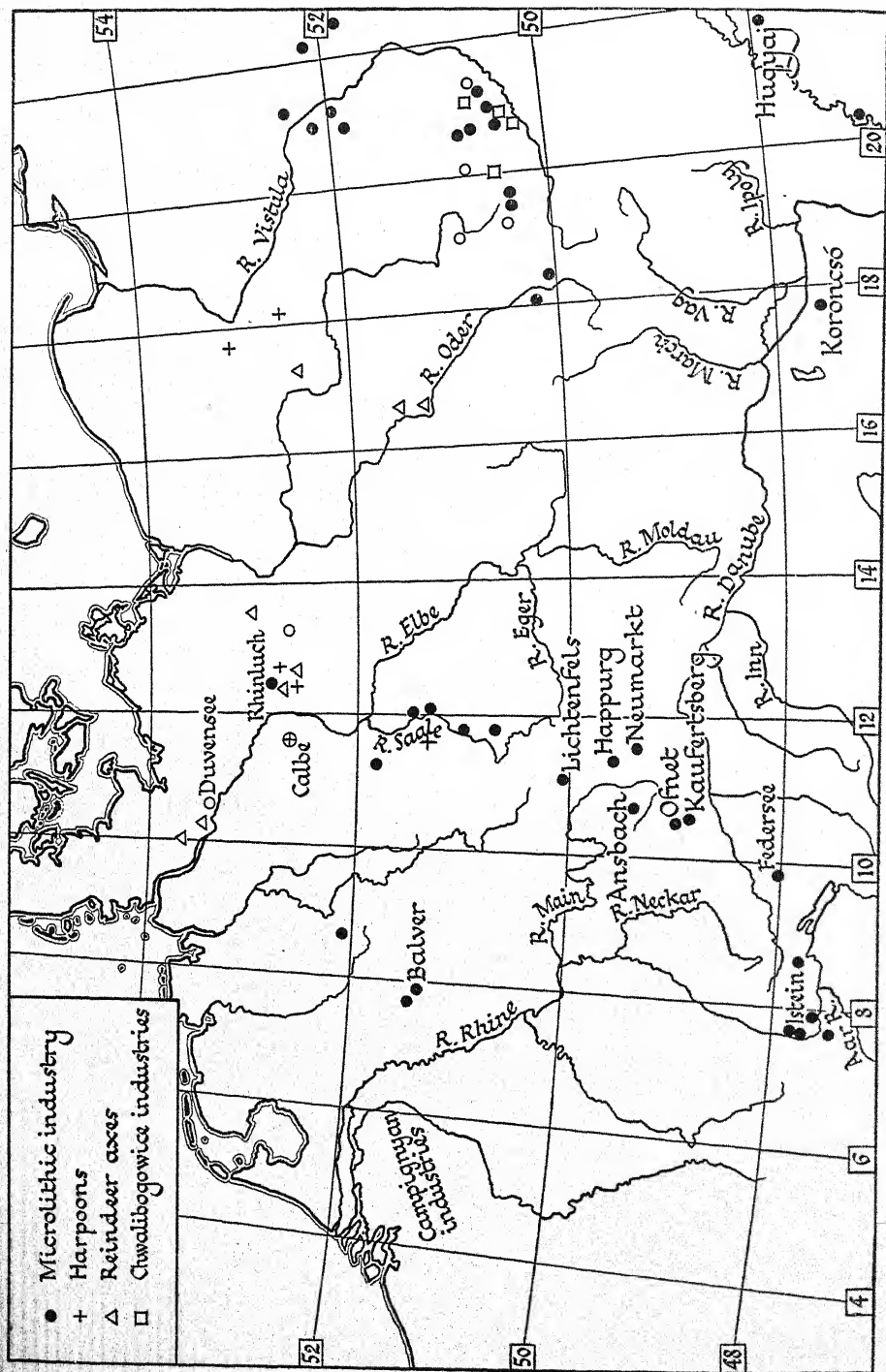
Flint, though absent from the löss, is too widely distributed *Obsidian* to need special mention. Obsidian has similar properties, but is superior and also rarer. The volcanic glass is found only in the Hegyalja range of North Hungary and again in the Hargita mountains in Eastern Transylvania.

Finally, certain greenstones were for their colour and hardness specially prized by neolithic man for the manufacture of axeheads. In the past it was supposed that all greenstone axes were Oriental imports, but to-day the material has been found native in various localities.<sup>3</sup> *Jadeite* Jadeite pebbles are found in the lakes of Geneva, Neuchâtel, and Bienne, and are probably derived from Monte Rosa. The same mineral is found in North Italy on the Lys in Monte Rosa. Nephrite is more widely distributed. Considerable boulders occur in Rügen, the Uckermark, in the environs of Potsdam, Magdeburg, Leipzig, and Breslau. It is found *in situ* near Harzburg, Jordansmühl, and Zöbten in Silesia, in the Fichtelgebirge, on the Gotthardt, in the Alps of Valais, in the Lower Engadine, in the Tarntal mountains in the Tyrol, and round Graz and Cilli in Styria.

<sup>1</sup> See de Navarro in *GZ.* 1925, pp. 482 ff.

<sup>2</sup> Schliz, *ZfE.* xxxv, pp. 643 f.

<sup>3</sup> Andree, *Mannus Bibl.* 22, pp. 25 f.



Map II. EPIPALAEOLITHIC SITES IN CENTRAL EUROPE



## II

### PALAEOLITHIC MAN AND HIS DESCENDANTS IN CENTRAL EUROPE

THE main theme of this book will be the diffusion of civilization along the Danube highway that took place in the 'neolithic' and later periods. But it is an indispensable preliminary to inquire whether the highway was itself already inhabited before the diffusion began and what sort of men lived on its immediate borders. That requires a brief examination of the palaeolithic and, still more, of the epipalaeolithic material.

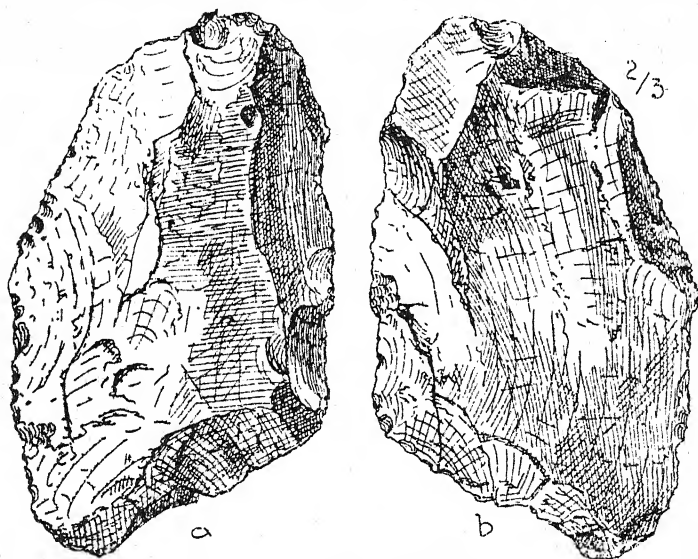


FIG. 1. Hand-axes from Józszáshely, after M. Roska

The Old Stone Age in all parts of Europe has been so often discussed in general text-books that it seems unnecessary here to deal at length with that period. At the same time the relatively independent position of Central Europe, even at this early stage of human culture, must be emphasized.

It has long been notorious that the heavy 'hand-axes' characterizing the Lower Palaeolithic Age of Western Europe and Africa are almost entirely missing in our area. Very recently Dr. Roska<sup>1</sup> has collected flint hand-axes, disks, and scrapers washed out by flood waters from a 'diluvial terrace'

*Lower  
Palaeo-  
lithic*

<sup>1</sup> *Bull. Soc. Sci. Cluj*, iii (1927), pp. 67-74; *Die Eiszeit*, ii, p. 117.

Rarity of  
core-in-  
dustries

near Józshely (Iosășel) in County Arad which might very well pass for Chellean (Fig. 1). But this possibly Chellean enclave in the Middle Danube basin stands quite alone. Some more questionable Chellean types have been reported from Certovadira in Moravia.<sup>1</sup> Otherwise only the latest phase of the Acheulian culture typified by the small hand-axes of La Micoque is represented east of the Alps—and that only sporadically—in such sites as the Klausennische<sup>2</sup> near Neuessing in Lower Bavaria, where, however, cold-loving animals such as the mammoth and *Rhinoceros tichorhinus* already occur. Similar material comes from the Gudenus Cave in Lower Austria<sup>3</sup> and Korlath in Slovakia,<sup>4</sup> and again in the Cave of Kostelik in Moravia,<sup>5</sup> and more abundant flints of the same type can be cited from caves of Western Galicia.<sup>6</sup>

'Premousterian'  
flake in-  
dustry

Neander-  
tal re-  
mains

On the other hand, it is clear enough from the well-known finds around Weimar, near Heidelberg (Mauer), and at Krapina in Croatia that hominids inhabited Central Europe already in interglacial times. At that period Central Europe belonged essentially to Obermaier's 'Premousterian' province of culture. The celebrated jaw extracted from the Mauer sands, which some authorities would refer to the second of Penck's interglacial periods (Mindel-Riss), belongs to a hominid who might well pass for an ancestor of the Neanderthal species. That species itself is represented at Ehringsdorf near Weimar and at Krapina not far from Zagreb. At the latter site palaeolithic man was associated with a 'warm' fauna (*Rhinoceros Merckii*), so that the Krapina culture must rank on almost any chronology as parallel to part of the western Acheulian phase. It may therefore be assumed that in the last interglacial epoch parts of Central Europe were occupied by Neanderthal man and his ancestors. The pre-Würmian Levalloise industry recognized by Breuil<sup>7</sup> in England as well as in France may denote an advance westward of this pre-Neanderthal family. Conversely, the La Micoque industries of Bavaria and Poland may indicate an eastward displacement of the frontiers of the Acheulian province. In fact, by the Steppe phase of the last interglacial epoch, the two cultural areas interlocked in a most complicated way.

<sup>1</sup> *Nied. Sb.*, p. 97, fig. 1; cf. Schráníl, *op. cit.*, p. 29.

<sup>2</sup> Birkner, pp. 51-3.

<sup>3</sup> *MAGW.* xxxvii, pp. 277 ff.

<sup>4</sup> Breuil, in *L'Anthr.*, 1923, p. 237.

Hillebrandt, *WPZ.* 1919, p. 19, classes

these artefacts as Campignyan.

<sup>5</sup> *L'Anthr.* 1925, p. 274, fig. 2; Obermaier in Schráníl, *op. cit.*, p. 30.

<sup>6</sup> Kozłowski, *Starsza*, pp. 8 f., pls. 1-III.

<sup>7</sup> *Man*, xxvi, 116.

In the Würm Ice Age, however, Central Europe as a whole was occupied by the Mousterian culture and, judging by the jaw from Šipka in Moravia, by Neandertal man. Remains are fairly plentiful from the Transylvanian Alps to the Hartz

*Mousterian culture*

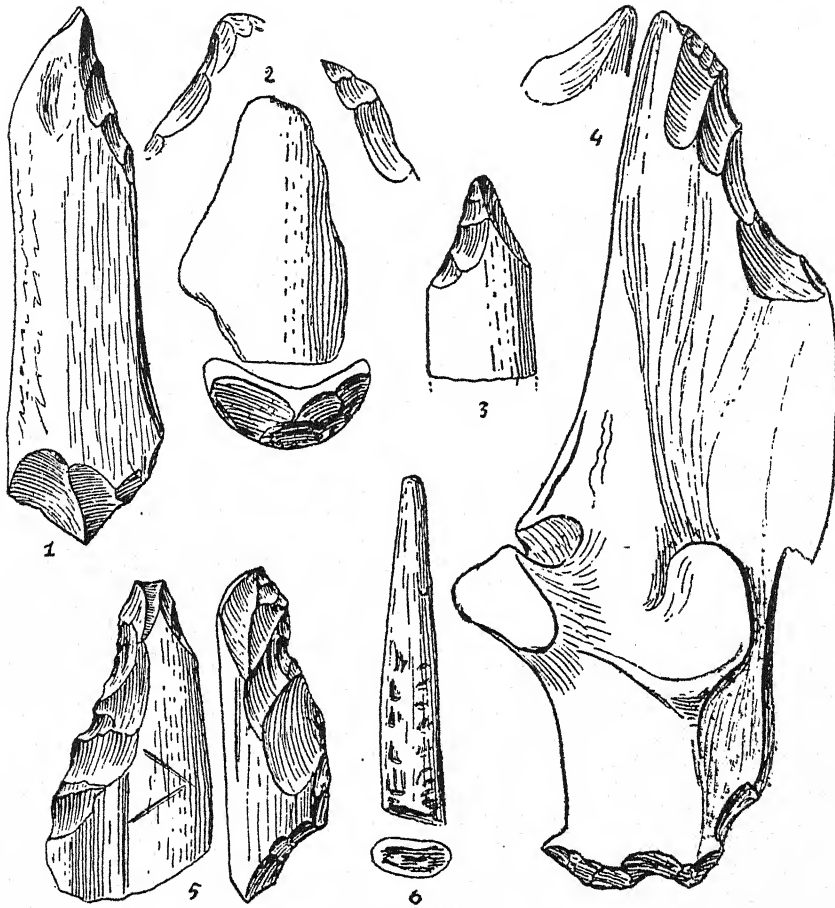


FIG. 2. Implements of bears' bone retouched like flint, Igrița. After Breuil. 32

and from the Carpathians to the Alps. In Transylvania Mousterian industry is represented both by 'stations' in the open and in caves. At Csoklovina (Cioclovina)<sup>1</sup> and round Federi, in the Transylvanian Alps south of Deva,<sup>2</sup> a rough industry in crystalline limestone was associated with abundant

<sup>1</sup> Breuil, *Bul. Soc. Sci. Cluj* (1925), pp. 193-5.

<sup>2</sup> *L'Anthr.* 1923, p. 328; *Bul. Soc. Sci. Cluj*, l.c., p. 191.

remains of cave bear. The cave of Igrita,<sup>1</sup> in the Bihar massif, is remarkable for instruments made by chipping bears' bones as if they had been flints (Fig. 2). In Hungary we encounter Mousterian implements in löss stations, accompanied by remains of the mammoth and woolly rhinoceros but no reindeer, for instance, at Táta,<sup>2</sup> west of Budapest. Farther north,<sup>3</sup> as might be expected, Mousterian settlements were almost exclusively in caves.

*Aurignacian sites*

As will shortly appear, it looks as if this cold Mousterian industry existed in parts of the mountains of Transylvania and Slovakia while the open steppe was being invaded by neanthropic stocks bringing a culture allied to the Aurignacian. The latter is represented over a wide area throughout our province from Transylvania and the Balkans<sup>4</sup> to Central Germany. The most celebrated settlements are of course the open air stations of Magyarbodza<sup>5</sup> (Buzeul Ardelean), east of Brassó (Kronstadt), Willendorf in Lower Austria and Předmost<sup>6</sup> and D. Vistonice<sup>7</sup> in the Moravian lowland; but the same industry is encountered in many caves or rock-shelters from those round Belgrade and at Cioclovina in the Transylvanian Alps to Ofnet in Bavaria, Wildscheuer on the Lahn, and Karlstein<sup>8</sup> in Eifel. Everywhere the Aurignacian is associated with a cold steppe fauna—mammoth, woolly rhinoceros. In the Middle Danube basin the reindeer seems absent. He appears, however, at Willendorf and in the uppermost Aurignacian at Ofnet. Typologically speaking, the Central European Aurignacian represents on the whole only the later phases of that culture as revealed in the classical French sites. Breuil has demonstrated the presence of types distinctive of the Middle Aurignacian, both at Magyarbodza and Předmost. In South-West Germany even Lower Aurignacian forms are said to occur. But at most sites Upper Aurignacian types—Font Robert points (Předmost), notched points (Willendorf, Magyarbodza) predominate, and microliths are common.

On the Middle Danube the distinctive Aurignacian bone-

<sup>1</sup> *Bul. Soc. Sci. Cluj*, ii, pp. 208 f. and figs.

<sup>2</sup> *L'Anthr.* xxxiii, p. 326.

<sup>3</sup> For Moravia see Knies' article in *Nied. Sb.*, pp. 98–9; and *Pravěk*, 1927, pp. 54 ff. Schráníl, *op. cit.*, pp. 19, 21, 23, 28.

<sup>4</sup> *L'Anthr.* xxxiii (1923), p. 333; *WPZ.* ii, p. 126; x, p. 35.

<sup>5</sup> *Bul. Soc. Sci. Cluj*, l. c., p. 200.

<sup>6</sup> *L'Anthr.* xxxiv (1924), p. 517.

<sup>7</sup> *Rev. Anthr.* xxxviii (1927), pp. 77 f.

The site shows already a quasi-microlithic industry. Notable are the heavy maces made from a mammoth's femur chipped along the edge, and heavy stone disks.

<sup>8</sup> *PZ.* iii, p. 201.

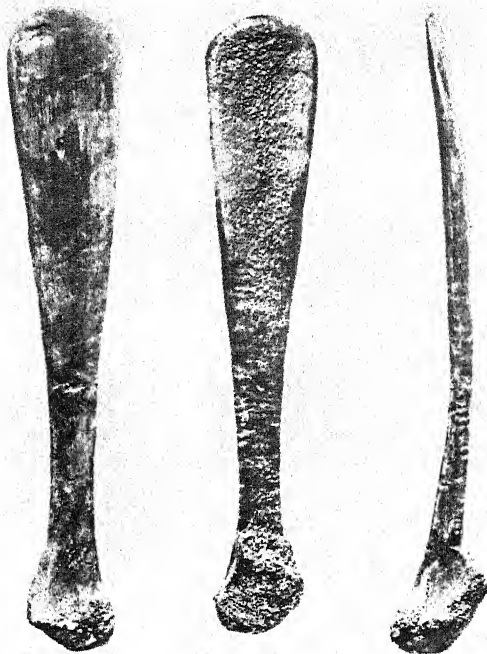


FIG. 3. Mammoth bone clubs, Předmost, l. 42 cm.  
After Absolon

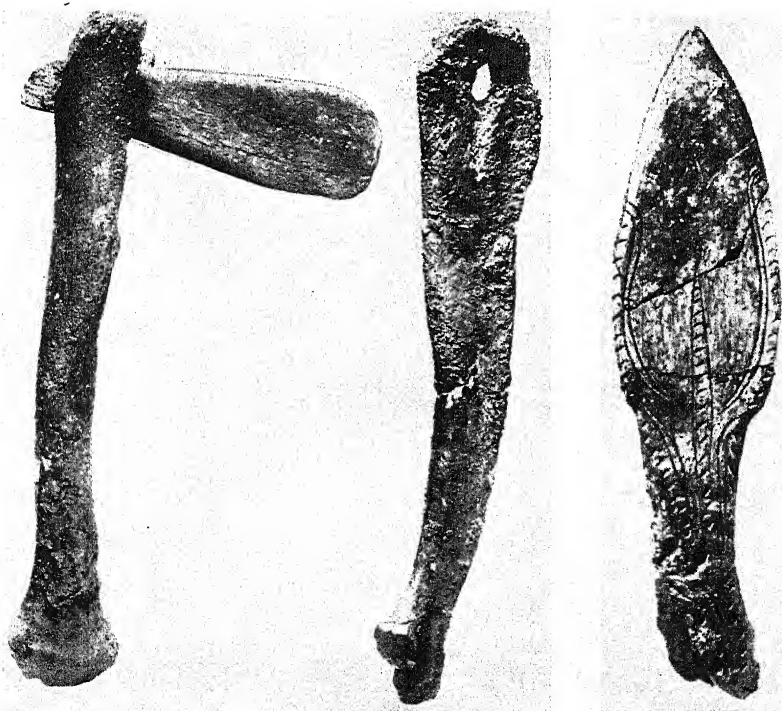
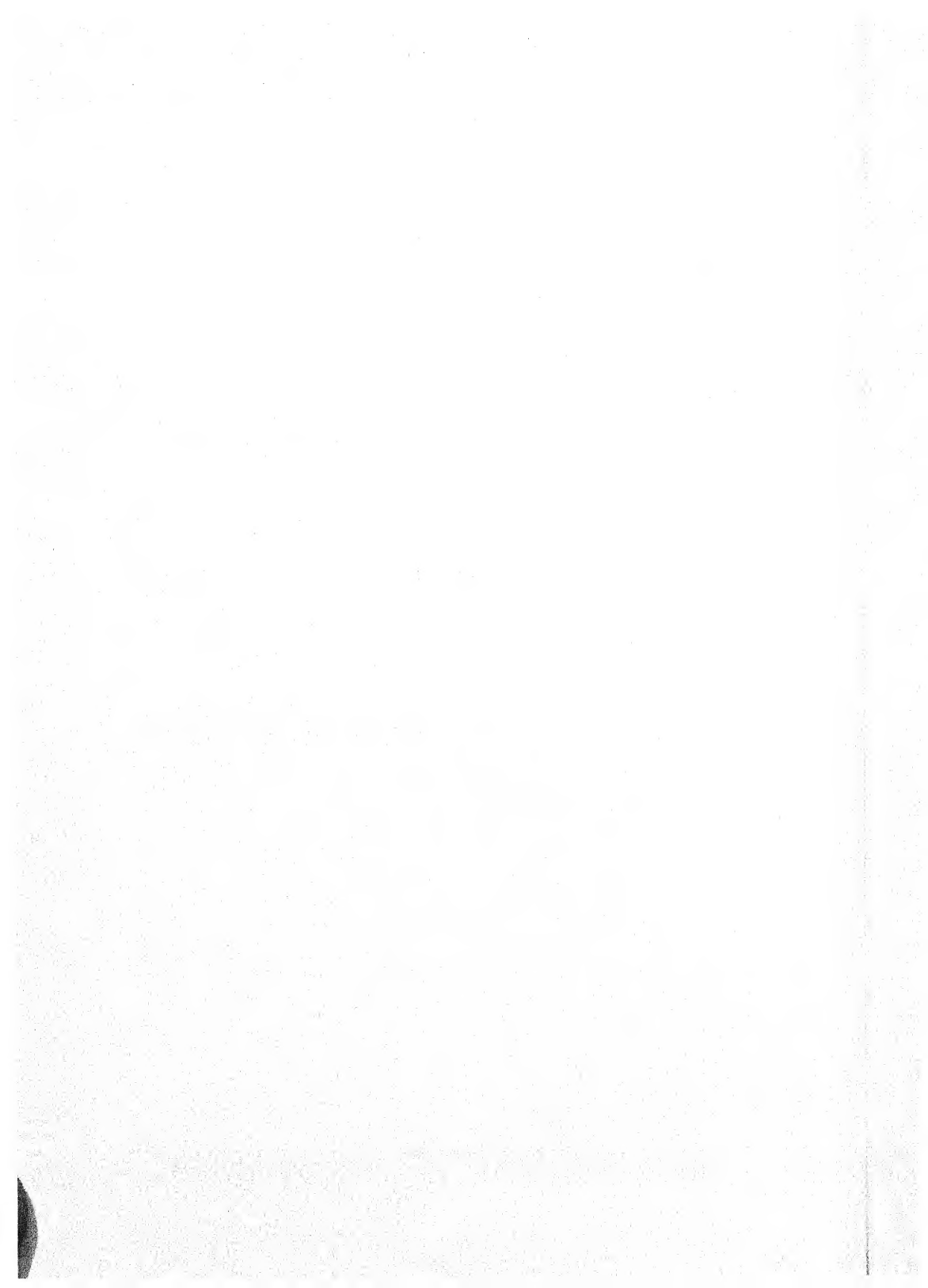


FIG. 4. Hatchet (reconstruction), mammoth rib with ivory 'polisher' hafted  
in it. Right, decorated implement made from a horse's mandible





work<sup>1</sup> is poorly represented in the material collected up to date. But at Vistonice and Předmost an extraordinary variety of implements made out of bone and ivory were discovered. Few of these can be paralleled in the classic French sites. It is, indeed, clear that Předmost represents a peculiar culture that may be closer akin to the Solutrean than to the Aurignacian. We may note here a large fork of mammoth ivory that Breuil believes was used for drawing out the guts of slain animals,<sup>2</sup> daggers made of lions' bones, unexplained articles made from the jawbones of horses (Fig. 4, 3), and the massive clubs or digging tools made from mammoths' ribs. Some of the latter are perforated, and Dr. Absalon has ingeniously suggested that they served as hafts for hatchets.<sup>3</sup> The 'axe-head', a forerunner of the neolithic celt, would be the spatuliform ivory implements that others have interpreted as polishers or spoons. If Absalon's reconstruction (Fig. 4, 1) be accepted, the antiquity of the axe will be far greater than had been supposed in the past.

*Předmost  
bone-  
work*

Moreover weapons of stone, ground and even perforated, were used by the hunters of Brno, Předmost, and Vistonice. They are disks, with a hole in the centre,<sup>4</sup> obviously anticipating the shape of the mace-head used in the same region in neolithic times. Art, poorly represented at other Central European sites, is already curiously stylized at Předmost. Menghin<sup>5</sup> rightly remarks that in this respect East Central Europe constitutes an independent art province, extending as far as Mezine in South Russia, and its art again anticipates that of the Neolithic Age in the same region.

*Art*

But more naturalistic statues in the round were also being manufactured. The famous Venus of Willendorf, related at once to the statuette from Kostienki on the Don<sup>6</sup> and the well-known ones from France and North Italy, with her statopygy and her hands clasping her breasts, again foreshadows the neolithic figurines of South-Eastern Europe and Hither Asia. What is more remarkable still is that human figures were even modelled in clay at Vistonice and apparently allowed to harden near the hearth.<sup>7</sup>

Cave paintings, comparable to those of France and Spain,

<sup>1</sup> A typical bone point with split base comes from Pallfy, a cave near Bratislava, *L'Anthr.* xxxiii, p. 330, fig. 7.

<sup>2</sup> *ILN.* Nov. 14, 1925, p. 948.

<sup>3</sup> *loc. cit.*

<sup>4</sup> *ILN.* Nov. 25, 1925, p. 1008, fig. 9;

*Pravěk*, 1927, pl. 1; *MAGW.* xxii, pl. III, 3.

<sup>5</sup> *Urg.*, p. 665.

<sup>6</sup> *L'Anthr.* xxxiv, p. 349.

<sup>7</sup> *ILN.* 1925, Nov. 7, p. 902, fig. 2, and p. 916.

have not been found east of the Alps. Indeed the only traces of parietal art at all are some unrecognizable designs recently observed in a cave in Eastern Slovakia.<sup>1</sup>

*Skeletal remains* The skeletal remains of the Central European Aurignacians have not as yet been properly described. A cup made from a skull and charred human bones suggesting cannibalism have *Ritual burials* been reported from D. Vistonice.<sup>2</sup> At Předmost a regular collective tomb was discovered. Several skeletons were here interred together, some in a flexed attitude, protected by the shoulder-blades of mammoths. Some of the skulls show a distinct tendency to brachycephalism. The teeth in several cases have been worn down in a peculiar manner as if their owners were accustomed to carry pebbles in their mouths.<sup>3</sup> One of the skulls, like one from a contemporary grave at Brno, has very heavily projecting eyebrow ridges, which in fact meet to constitute a true supraorbital *torus* as in Neandertal men. Schliz, Absalon, and Matiegka have inferred from this feature that the skulls in question belong to descendants of that Neandertal species, crossed perhaps with neanthropic blood. Boule and Breuil have criticized this thesis, pointing out that in the Aurignacian skulls the chin and mastoid process are well developed, and Neandertal traits are really few. Bonnet<sup>4</sup> has likewise interpreted the skulls from Ober-Cassel as a cross between Neandertal and Cro-Magnon stocks (Breuil considers these skulls as earlier than Magdalenian). According to Keith one of these skulls is Proto-Nordic.<sup>5</sup> The tall Cro-Magnon stock of the West is unmistakably represented in the skull from Fürstjohanneshöhle near Lautsch. Szombathy would distinguish a third racial group, represented here by an undatable skull found at Brüx in Bohemia.<sup>6</sup>

In any case the skeletal remains confirm the inference, based on the industrial revolution, that the Aurignacian age witnessed the advent of neanthropic man in Central Europe as in the West.

It is further clear that our area was already on the way to becoming a distinct province both industrially and ethnically. Unfortunately it is not possible to say whether the new indus-

<sup>1</sup> Dr. Eisner in Bratislava very kindly showed me photographs of these unpublished paintings.

<sup>2</sup> Schráníl, *Böhmen*, p. 7.

<sup>3</sup> *IIA*, 1924, p. 289. For a general account of the burials see Sollas, *Ancient Hunters* (1924), p. 454; and

Keith, *Ant. Man*, i, p. 105.

<sup>4</sup> Bonnet, Steinmann u. Verworn, *Der diluviale Menschenfund von Oberkassel bei Bonn* (1919).

<sup>5</sup> *Ant. Man*, 1925, i, p. 107.

<sup>6</sup> *MAGW*, lvii (1927), p. (55); lvi, p. 215.



tries and the new men reached the Danube by a different route from that which brought them to France and to Britain. Suffice it to say, that in view of the comparative lateness<sup>1</sup> of the East European Aurignacean types an invasion from the East, such as Reinach<sup>2</sup> had outlined, seems unlikely. At the same time the skeletal material at least suggests the possibility that Neandertal man was not exterminated by the Aurignacians with the same ferocity as the Tasmanians were by the British. The industry from the caves in the Bükk Mountains on the borders of Slovakia and Hungary strengthens this impression. The lower levels, for instance at the cave of Szeletha,<sup>3</sup> contain many flints of Mousterian type, particularly side-scrapers and tiny hand-axes like those of Gudenus and La Quina, but often worked on both sides by pressure flaking. The fauna includes cave-bear and a very few reindeer. It seems as if the little hand-axes evolved towards a rough Solutrean 'laurel-leaf', such as appears with remains of hyaena in the middle strata. By this time the palaeolithic inhabitants of the cave were already using the obsidian from the adjacent Hegyalja for implements. At Jankovich,<sup>3</sup> a cave on the other side of the Danube above Budapest, the same crude 'laurel-leaves' were apparently associated with 'Mousterian' points and bone points with split bases of Aurignacian type. Conversely, we find stray Solutrean 'laurel-leaves' worked on both sides in an Upper Aurignacian context in Moravia, e.g. at Předmost.<sup>4</sup>

*Survivals  
of Mous-  
terian  
tradition*

*Evolution  
of proto-  
Solutrean*

All this might well indicate that the Solutrean was developing in North Hungary and Slovakia out of a late Mousterian of the La Quina facies, while the Aurignacian industry was current in Moravia and on the Hungarian plain. It is in any case clear that the Solutrean nowhere represents a direct continuation of the Aurignacian. In France it is admittedly an episode, interrupting locally the typological series Aurignacian-Magdalenian. It is further admitted that in the proto-Solutrean of North Hungary we have an early stage of this episodic industry. From the Mousterian affinities of this proto-Solutrean, should we infer that the Solutrean industry was the creation of Neandertal man or his hybrid descendants? Was the technique of pressure flaking, which later enjoyed such a splendid career and such a vast vogue, his invention? That is obviously another question. In Central Europe Solutrean culture did not last

*Hunga-  
rian  
origin of  
Solutrean  
industry*

\* In Poland no Lower or Middle Aurignacian has been detected; Kozłowski, *Starsza*, p. 39.

<sup>2</sup> *L'Anthr.* xxxiv, p. 349.

<sup>3</sup> Breuil, *L'Anthr.* xxxiii, pp. 337-8.

<sup>4</sup> *Ibid.* xxxiv, p. 519.

to a later date than elsewhere, and did not attain the same rich developments. In the uppermost layers in the Bükk caves we find good laurel-leaves among the bones of Arctic rodents but not the shouldered points or other types which have long (wrongly) been regarded as classical in the West.

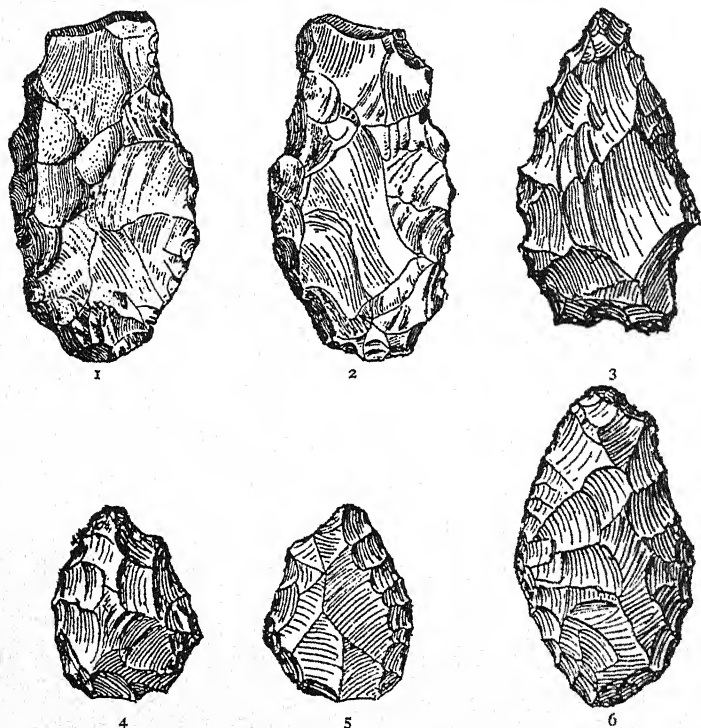


FIG. 5. Proto-Solutrean types from Szeletha, after Breuil.  $\frac{3}{4}$ . (1 and 2 and 4 and 5 represent the same implement viewed from different sides)

*Rarity of  
Solutrean  
in Tran-  
sylvania*

*Absence  
of Mag-  
dalenian*

Farther south, this late stage cannot be traced distinctly. A few flakes from Valea Chichereului and Magyarbodza<sup>1</sup> give a hint of Solutrean technique, but a developed Solutrean and, still more, a Magdalenian industry are as yet totally missing; a true Magdalenian is indeed not demonstrated in the Middle Danube basin at all. We meet an approximation thereto in the uppermost layers of some caves in North Hungary and Slovakia; but, despite the presence of a certain amount of bone-work, the flints from these sites, associated with plentiful remains of reindeer and Arctic rodents, suggest rather an evolved Aurignacian. The implements tend to microlithic forms, and

<sup>1</sup> Breuil in *Bul. Soc. Sci. Cluj*, 1925, pp. 198 and 208; Roska, *ibid.* iii (1927), p. 193, and iv (1928), p. 38.

a tanged point, like a miniature Font Robert point, is the leading shape. This industry finds exact parallels in the Chwalibogowice culture discovered by Kozłowski in the lowest levels of the sand-dunes in Little Poland.

The poor development of Upper Palaeolithic industry in 'Hungary' is doubtless to be correlated with climatic and floristic factors—the spread of thick forest, the extension of areas inundated by a Danube swollen by melting glaciers, and the consequent retreat or extinction of the sub-Arctic fauna that glacial man had hunted. Farther north this process was naturally slower, and opportunities were available for the development of something at least parallel to the French Magdalenian. Indeed an actual intrusion of Magdalenians from France is not altogether impossible. Harpoons with double rows of barbs, batons, and needles have been found as far east as Moravia.<sup>1</sup> On the eastern slopes of the Alps in Bavaria and Switzerland—in the neighbourhood, that is, of the retreating glaciers—the Magdalenian industry appears in its classical form. At Klausen in Lower Bavaria even some engravings on stone slabs are available. Those of Kesslerloch are already famous. On the eastern border of this area we have again good Magdalenian bone-work and flints in Poland; but harpoons are here absent and the ornamentation purely geometric. The Polish industry of this age might, in fact, best be termed a developed Aurignacian with certain Magdalenian additions (needles).

*Magdalenian on Alpine slopes*

*Poland*

As the severity of the climate was gradually reduced, despite dry conditions, forest invaded the steppes and the reindeer-hunters seemed gradually to have disappeared. In many Alpine and Bavarian caves, as at Kesslerloch, a sterile stratum marks a cultural hiatus. The gap was not, however, complete. Some caves in Switzerland and South Germany were still occupied at a date when the reindeer was extinct and the mountains were clothed with forest. To this epoch belongs the celebrated deposit in the cave of Birseck near Basel, with distinctively Azilian pebbles<sup>2</sup> and a modern forest fauna. To the same chronological phase, but without the least trace of typical Azilian harpoons or pebbles, belong the uppermost industries from the caves of Istein and Kleinkems in Baden, and Ofnet in Bavaria. The last site is particularly celebrated

*The 'hiatus'*

*'Azilian' deposits*

<sup>1</sup> Schráníl, *Böhmen*, pp. 19, 20, 23. Interesting is the mention of amber at two sites.

<sup>2</sup> Birkner (p. 71) denies the Azilian character of these pebbles.

*Partial interments* for its partial burial of skulls. The skulls were regularly arranged in a circle bedded in a layer of red ochre: the majority belonged to women and children.<sup>1</sup> The variation in the physical characters of the several skulls was very wide. Some were *Brachycephals* markedly brachycephalic, others were equally dolichocephalic, and the rest lay between these extremes. A similar case of the interment of a skull<sup>2</sup> alone was discovered by Birkner at Kaufertsberg in the same district in 1913. Here the skull lay under a stratum containing microlithic types, including gravers which might pass for Azilian,<sup>3</sup> but also a very few bones of reindeer. Azilian (Tardenoisian) types, not stratigraphically separated from palaeolithic and later remains, have been detected by Breuil and Obermaier in the cave of Happurz in the Frankish Jura.<sup>4</sup> It should be noted that, in view of the pronounced tendency to brachycephalism already observable in the Předmost skeletons, the round heads of Ofnet do not necessarily betoken a fresh racial intrusion.

*Microlithic industries Southwest Germany* No similar indications of a survival of palaeolithic man beyond the reindeer age are afforded by the caves farther east, though Absalon in Moravia, Hillebrandt in Hungary, and Roska in Transylvania have eagerly sought for epipalaeolithic remains. On the other hand, such remains are available in a few isolated patches, particularly on sandy stretches that remained as open oases amid the growing forests. Round Ansbach,<sup>5</sup> near the Federsee,<sup>6</sup> north of Neumarkt in Oberpfalz,<sup>7</sup> round Lichtenfels on the Upper Main,<sup>8</sup> and at the 'Wüste Scheuer' near Döbritz-Meiningen,<sup>9</sup> in South-West Thuringia geometrical microliths and pigmy gravers of Tardenoisian type have been collected. Near Ansbach an actual pit-dwelling floored with flat stones was discovered.<sup>10</sup> The ashes, here collected, revealed the use of pine and oak as fuel.

While these microliths may indicate the survival of palaeolithic tribes on suitable patches, the occurrence of rough unornamental potsherds near Lichtenfels and at the Wüste Scheuer and stray triangular arrow-heads of neolithic form at other sites (Ansbach and Neumarkt) is a warning against too

<sup>1</sup> Peake and Fleure, *Hunters and Artists*, p. 125; Sollas, *op. cit.*, p. 610.

<sup>2</sup> Described by Scheidt, *Anthr. Anz.* i (1924), p. 30.

<sup>3</sup> *WPZ.* i, p. 18, and fig. 1.

<sup>4</sup> *Abh. Nürn.* xx, p. 37, and pl. 18.

<sup>5</sup> Gumpert, *Fränk. Mesolithikum*.

<sup>6</sup> *Nachrichten D. Anthr. Gesell.*, 1928,

p. 78.

<sup>7</sup> Birkner in *Abh. Bayer. Akad. (math.-phys. Kl.)*, Suppl. 1923, pp. 245 f., fig. 9.

<sup>8</sup> *Abh. Nürn.* xx (1913), pp. 6 f.

<sup>9</sup> Schmidt, &c., *Diluviale Vorzeit Deutschlands*, p. 103.

<sup>10</sup> Gumpert, figs. 11-14.

high a dating. Near Ansbach heavier implements also occur, and it is clear that the epipalaeolithic period overlapped with the neolithic. A site near Merseburg and the Galgenburg at Halle have also yielded analogous epipalaeolithic remains, only slightly less typical.

On the Upper Elbe, in Bohemia, Lower Austria, Silesia, and Moravia similar remains, attributable to descendants of palaeolithic stocks, are totally lacking despite intensive researches by Czech, Austrian, and German archaeologists. But at Gratkorn

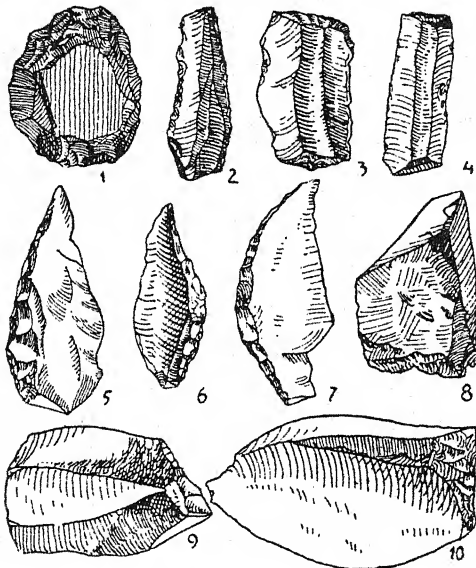


FIG. 6. Microliths from Hungary; 2 and 4 Huguaj, the rest, Aldożó halom, after Hillebrandt, natural size

near Graz in Styria a mesolithic site has been recently discovered that may prove to be connected with those north of the Alps in Bavaria and Switzerland. Farther east there are two groups in Hungary and Little Poland respectively. In the first country Hillebrandt<sup>1</sup> has collected microliths, including small disk scrapers and batter-backs, from a sandhill near Koronczó (Győr) and dunes near Tószeg (beyond the Tisza) and Huguaj (Szabolcs). Pigmy graves occur only at the last-named site that lies in a region always continuous culturally with Galicia.

*Hungarian  
microliths*

The Polish microliths have a much more extensive range. The oldest industry here, christened by Kozłowski the Chwali-

<sup>1</sup> WPZ. xii, pp. 81-3.

*Chwalibogowice culture* bogowice culture, is represented on the dunes of Little Poland within the bend of the Vistula, farther east on the Bug, and again in Lithuania.<sup>1</sup> The most distinctive implement is a small shouldered point, resembling a diminutive Font Robert point such as we have already met in Hungary. On the Polish dunes such implements are found beneath a 'fossil humus', formed apparently in the Atlantic period. Rather similar types are met in Zealand, Norway, Holstein, and even Holderness. The Chwalibogowice culture, which corresponds in time to the late Magdalenian in the West, gives place to a typical Tardenoisian with geometric microliths found in the Polish dunes both in and under the fossil humus of Atlantic date. The industry has been identified in most of the sandy country in Little Poland, Great Poland, round Warsaw, and in Lithuania.<sup>2</sup> As elsewhere the remains come from open camping places.

*Eastern Tardenoisian*

Geographically, though strictly parallel and doubtless akin to the Franco-Belgian Tardenoisian, the Polish industries are nearer to the widespread Russian series that extends from Volhynia to the Crimea and the Volga,<sup>3</sup> to which the finds from the Hungarian dunes can best be attached.<sup>4</sup>

*Survivals of palaeolithic stocks*

The impression produced by the foregoing survey is that Central Europe, relatively densely populated in the glacial period, became almost uninhabited when the reindeer retired northward and forest invaded the former steppes. The persistence of small groups of hunters is, however, probable in three areas—the Upper Rhine, the Bavarian-Thuringian upland, and the sandy country of North Hungary with the Polish dune areas. The remains are quantitatively insignificant. Still the period they have to fill up is trifling compared with the duration of Magdalenian or Aurignacian. Moreover, particularly in Hungary, the search for epipalaeolithic remains has only just begun.

We cannot say for certain whether the makers of these implements were newcomers or just descendants of the local Upper Palaeolithic races. In any case they were probably still merely hunters without regular settlements who camped where the sand checked the encroachments of the forest. These scattered families, if they took to food production when they came in contact with the neolithic peoples in the Subboreal

<sup>1</sup> Kozłowski, *Młodsza*, p. 7; *Małopolskiej*, pp. 103-4, 131; *L'Anthr.* xxxvi, p. 52. Cf. Peake and Fleure, fig. 65.

<sup>2</sup> Kozłowski, *Młodsza*, p. 18.

<sup>3</sup> *Russian Anthropological Journal*,

Moscow, xiii (1924), pp. 211 ff. (summary on p. 227).

<sup>4</sup> North Hungary has at all times been closely linked to South Russia.



phase, would multiply rapidly and exercise a decisive influence on the subsequent development of civilization.

In the north matters were very different. Ekholm has recently suggested that a quite hypothetical interglacial population of Neandertaloid affinities lived on in Western Norway into post-glacial times.<sup>1</sup> Apart from this possibility, the earliest traces of human habitation are certain hammers and axes of reindeer's antler from Jutland and Zealand to which there are parallels in North and Central Germany, Poland, and Silesia. These implements (the last of stags' horn) date from early Ancylylus times. Shouldered points of flint reminiscent of Chwalibogowice types seem to belong to a like age.<sup>2</sup> The distribution of axe-like implements<sup>3</sup> suggests that their makers came from the south, that is, from Central Europe or South Russia (vide map II). A connexion with the 'axes', clubs, and other heavy bone-work of Předmost seems probable.

A like origin has been ascribed to the fisher-folk who, a little later, created the Maglemose culture<sup>4</sup> on the shores of the Ancylylus lake. This civilization is characterized by horn and bone harpoons, fish-hooks, daggers, chisels, and perforated horn axes and picks. The bone chisels anticipate the peculiar shape of the Danubian stone hoe or 'shoe-last' celt. Pigmy flints were used for arming harpoons, the flakes being stuck into grooves running along either side of a bone point. Together with pigmy flints of the usual Tardenoisian type, went a 'heavy industry'—flint hatchets and adzes. At Svaerdborg, disk-shaped ground stones perforated for a shaft, as at Předmost, were discovered,<sup>5</sup> and at Holmgaard in Zealand a ground and perforated stone pick was unearthed, but not in the course of scientific excavation.<sup>6</sup> It resembles a perforated shoe-last hoe of Danubian type. The makers of these artefacts dwelt on the shores of lagoons. At Maglemose itself some sort of raft has been suspected. At Duvensee the round dwelling-places were floored with bark apparently laid over withies.<sup>7</sup>

<sup>1</sup> WPZ. xii, pp. 11 f.; xiii, pp. 20 f.

<sup>2</sup> Figures in WPZ. xii and AfA. xx (1923); Peake and Fleure, *op. cit.*, p. 105. Long gravers and blades seem to be connected with the points in Holstein, MAGW. lvii, p. (160). *Hamburg Festschr.*, pp. 183 f.

<sup>3</sup> Schwantes, *AfA.*, l. c., assigns great significance to the reindeer axes which he would regard as absolutely the oldest axes ever used marking the

boundary between the Old Stone Age and the New.

<sup>4</sup> Fuller accounts will be found in my *Dawn*, c. I; Burkitt's *Our Early Ancestors*, and his Presidential Address in PSEA. v (1925); and BRGK. xvii, pp. 154 ff.

<sup>5</sup> MSAN. 1926-7, p. 85.

<sup>6</sup> *Ibid.*, p. 41, and fig. 11.

<sup>7</sup> PZ. xvi (1925), p. 175. Cf. *Hamburg Festschr.*, p. 204.

Scandi-  
navia:  
Lyngby  
culture

Magle-  
mose cul-  
ture



*Extensions up Elbe and Vistula* The Maglemose culture was definitely coastal, but it spread inland up the valleys of the Elbe, and the Vistula. Harpoons have been found in the Elbe valley, in Westhavelland<sup>1</sup> and even as far south as Freyburg on the Unstrut.<sup>2</sup> Some of the Havelland harpoons are rounder and more 'Magdalenian' in appearance than the normal Maglemose implements. Another inland group of harpoons comes from the Bydgoski Canal in the Polish corridor between the Vistula and the Noteć.<sup>3</sup> The Maglemose culture exhibits in its harpoons rather vague affinities with the western Magdalenian, but the tendency to-day is rather to derive it from an Eastern or Central European palaeolithic centre. The Maglemose art<sup>4</sup> prefers the abstract

*East Central European affinities of Maglemose*

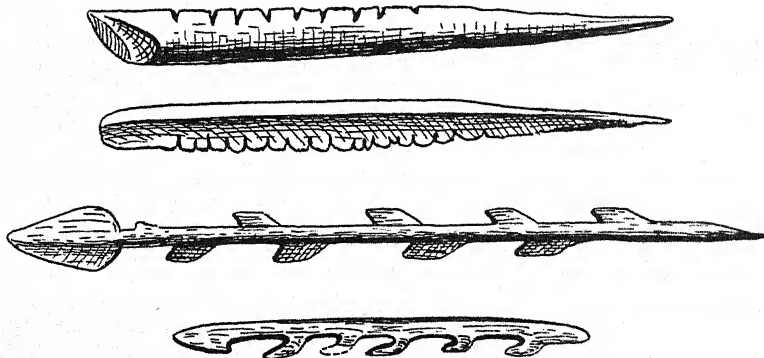


FIG. 7. Harpoons, Havelland, after Kupka.  $\frac{1}{2}$

geometric patterns we have noted above in Moravia and Poland to the naturalistic decoration current in palaeolithic France. Franz has further noted the bored mace-heads as a link with Předmost.<sup>5</sup> The geometric microliths might denote a Capsian-Tardenoisian intrusion, but in view of the long series of similar pigmy flints in South Russia these too may come from the south-east as well as from the south-west. The heavy industry, on the other hand, raises an unsolved problem. The pick at least should, in some way, be linked up with the hand-axes of Lower Palaeolithic times, though the 'tranchet' may have been treated as an enlargement of a Capsian flake tool.<sup>6</sup> A connexion with the Lower Palaeolithic series remains to be discovered.<sup>7</sup> Perhaps it should be sought in the bone-work at Předmost. The

<sup>1</sup> PZ. ii, p. 41. AFA. xxi, pp. 110 f.; Hamburg Festschr., p. 217.

<sup>2</sup> VAT., p. 62, and pl. vii, 110.

<sup>3</sup> Kozłowski, *Młoda*, p. 12.

<sup>4</sup> See PZ. xvi, p. 197, for a new illustration

from Rügen.

<sup>5</sup> MAGW. lvii, p. 9.

<sup>6</sup> Burchell, *Man*, xxvi, 28.

<sup>7</sup> Menghin, *BRGK*. xvii (1927), pp. 161, 171.

growth of forest and the extinction of mammoths would impel a return to the old hard material.

In Atlantic-Littorina times the heavy industry comes to play a dominant part in the culture of the Shell Mounds.<sup>1</sup> The latter was the work of a sea-coast population, but did not supersede the Maglemose industry everywhere. The leading types are now the heavy flints that were previously rare; geometric microliths vanish; the fine bone-work is entirely given up and only daggers or rough chisels are made of that material; per-

*Shell  
Mound  
cultures*

*Pottery*

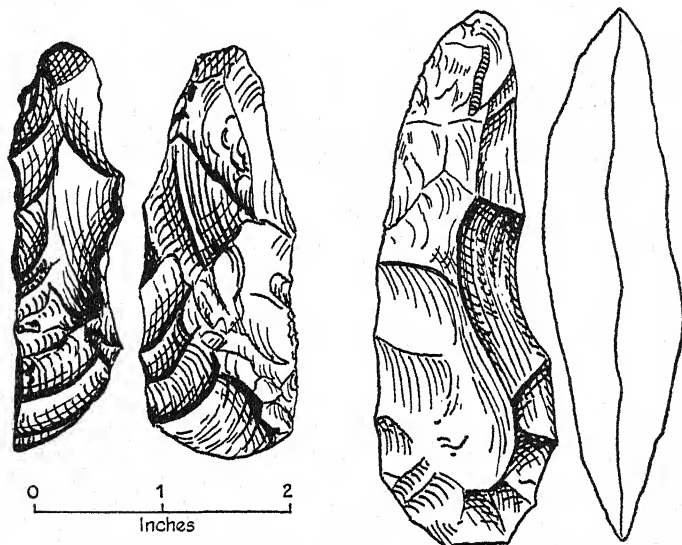


FIG. 8. Pick and tranche from Calbe, after Kupka

forated horn picks and adzes but also true axes survive; in the later levels of the shell mounds only<sup>2</sup> rough pottery appears.

Flint implements, similar to those of the Shell Mounds, appear in the French Campignyan, in Belgium, and on the Lower Rhine<sup>3</sup> and again east of the corridor in Lithuania, East Poland, and Central Russia. In Central Europe certain remains of the same type occur as far south as Calbe on the Milde in Altmark.<sup>4</sup> The site lay on the edge of a lake now dry. Since harpoons were found at the same place the industry here revealed should perhaps be compared with the Maglemose phase of Denmark. Less typical flints from Stassfurt, south of Magdeburg, have recently been published as proto-neolithic.<sup>5</sup>

*Extension  
of Shell  
Mound  
types*

<sup>1</sup> Literature as in note 4 on p. 21.

<sup>2</sup> Franz, *MAGW.* lvii, p. 19.

<sup>3</sup> *PZ.* iv (1912), pp. 263 f.

<sup>4</sup> *ZfE.* xxxviii (1906), pp. 744 f.; xxxix, pp. 198 f.

<sup>5</sup> *Mannus*, xvii, pp. 65 f.

Campignyan types are also reported from the area between the head-waters of the Warta and the Pilica in South-Western Poland<sup>1</sup> as well as from Volhynia. So-called Campignyan types, notably the pick and the tranchet, outlast the Atlantic period both in Denmark and in France, so that the absolute chronological position of the various finds just enumerated is uncertain. But if the distribution of such types does not indicate the area of settlement at the Littorina or any other precise epoch, it does disclose the extension of the adherents of a specific epipalaeolithic or mesolithic tradition. At the same time, as Franz has recently noted, the Shell Mounds themselves are separated by no great gap in time from the full neolithic period in Denmark.

*Origin of Shell Mound culture* The origin of the Shell Mound culture is still an unsolved riddle. Friis Johanssen, Kozłowski, Linqvist, and Menghin incline to postulate a new invasion, emphasizing the difference from Maglemose. Kossinna and Nordmann regard the Kitchen Middens as one branch of the evolved Maglemosian. At the moment speculations on the point are waste of time. The only substantial new invention is represented by the pottery, and that does not begin with the Shell Mounds but is something superadded much later, probably a new cultural borrowing, from the first Dolmen-builders. In this connexion certain sherds found associated with graves and other microliths in an Ancyclus deposit at Rhinluch (Brandenburg) deserve attention. They are ornamented with the impressions of a fine mat-like fabric of rush-fibres.<sup>2</sup> This may be evidence for textile or basketry prototypes for the early neolithic pots of the north, but not of course for a local invention of the art of modelling and baking clay. It cannot be proved that that was practised in the north before the advent of the Dolmen culture.

*Rush-basket pottery*

*Conclusion* We see then that outside our area to the north a relatively large population survived to carry on palaeolithic traditions into the holocene.<sup>3</sup> The peoples in question were for the most part confined to the shore by dense forest from the Boreal period till the effect of the Subboreal desiccation made itself felt. But some of these fishers may have made their way up the Elbe and the Vistula. On the borders of the corridor there were other hunting tribes in Belgium and on the Lower Rhine and in Poland. Within our area proper such remnants were rare and scattered. None of these fragmentary groups, eking out a bare existence

<sup>1</sup> Kozłowski, *Młodsza*, p. 16.

p. 148.

PZ. xv (1924), pp. 75 f.; *Real.* xi,

<sup>3</sup> Cf. *Hamburg Fest.*, pp. 164 ff.

on patches of sand or the shores of lakes or seas in the midst of the primeval forest, had any opportunity for creating unaided a neolithic civilization. That came to them from the south up the Danube corridor as we have described it in Chapter I; perhaps also in some cases by sea from the west or across the steppes from the south-east. We may therefore turn to the Middle Danube and see how the domestic animals and cultivated plants were introduced to the lands awaiting settlement on or beside the Danubian corridor.

The following table sets forth the views of Schwantes<sup>1</sup> on the mesolithic cultures of the north.

<i>de Geers dates</i>	<i>Baltic phase</i>	<i>Annalic epoch</i>	<i>Culture in north</i>	<i>Culture in west</i>
9000 B.C.	? Yoldia	Preboreal	Ahrensburg- Chwalibogowice	Upper Magda- lenia
7000	Ancyclus	„	Lyngbly	Azilio- Tardenoisian
	„	Boreal	Duvensee	
	„	„	Maglemose	
		Atlantic	—Bloksbjerg <sup>2</sup>	
5500	Litorina maximum	„	Shell mounds	

<sup>1</sup> Adapted from *Hamburg Festschrift*, p. 164.

<sup>2</sup> A site occupied immediately *before* and during the Litorina maximum re-

presenting according to Westerby a transition from Maglemose to classical shell mound cultures.

### III

## THE FIRST NEOLITHIC CIVILIZATION ON THE MIDDLE DANUBE

THE natural way into the closed basin of the Middle Danube lies along the river through the Iron Gates. Hence, if the neolithic civilization were in fact introduced from without, it must have been brought by people coming by water. The shoals of sturgeon and other fish would in themselves supply a motive for the voyage up-stream from the Lower Danube and the Black Sea coasts. We should therefore expect to find the earliest neolithic remains on the banks of the great waterway, and this is actually where we find them.

*Vinča:* A spot that could not fail to attract our hypothetical early voyagers is Vinča, on the south bank a little below Belgrade. Here a ridge of löss, actually cut by the river, offered would-be settlers a relatively open space rising above the jungle of the marshy alluvial flats. An adjacent stream ensured a good supply of water. The spot was in fact early settled and remained occupied throughout the Stone and Bronze Ages. The debris of successive settlements has added some nine metres to the height of the original hill, and the denudation by the Danube has exposed a most instructive profile. Professor M. M. Vassits of Belgrade<sup>1</sup> has been carrying out most careful excavations at the site for a number of years. His investigations are far from completed; only a very small area has so far been explored; nothing but one preliminary report has been published. Nevertheless the results so far obtained provide a standard—the sole standard available—whereby material gathered elsewhere in a less scientific manner may be arranged and classified provisionally.

*Vinča I* The oldest remains come from pit-dwellings excavated in the virgin löss. Similar half-subterranean huts continued in use till a point about 5.5 m. from the present surface. The material from the lower levels—4.5 m. deep (including the oldest pit-dwellings themselves)—seems fairly uniform, though the repeated excavation of fresh hut foundations must clearly have confused the stratification. The lower levels must, accordingly, be grouped together under the name of 'Vinča I'

<sup>1</sup> The only report (on the excavations up to 1908) appeared in *PZ*. ii, pp. 12 f. and iii. The account of Vinča is based primarily on the first paper.

subject to the proviso that the deep deposit allows time for considerable changes, not yet recognizable stratigraphically.

At a depth of 5.5 m. the oval pit-dwellings were abandoned for rectangular houses, supported by posts, wholly above the ground level. At the same point notable innovations in the pottery become evident, and obsidian appears for the first time. The new material continues for the next one and a half metres above which Bronze Age ware begins to appear. The strata from 5.5 to 4 m. may therefore be termed *Vinča II*. The superficial layers which may have been disturbed need not concern us here. It will be convenient to confine our attention to *Vinča I*.<sup>1</sup>

Similar material to that from *Vinča I* can be identified at several other sites in the Middle Danube basin: these are *Csóka*<sup>2</sup> on the Tisza; *Tordos*<sup>3</sup> on the Maros in Transylvania and the sites near *Vršac*<sup>4</sup> in the Banat; and the harpoons at least are found as far north as Gyula in county Békés. *Csóka* is situated, like *Vinča*, on a ridge of löss cut by the Tisza; *Tordos* also lies on the river bank. All sites have,<sup>5</sup> like *Vinča*, yielded objects of varied date, but no reports are available to enable the material from the several levels to be distinguished. We shall therefore describe the material from *Vinča I*, noting incidentally the parallels from other stations.

The pottery from *Vinča I* is already very varied; we distinguish four main fabrics.

1. The commonest ware at all sites is rather coarse, unpolished, and burnt in an open fire. It varies from black to dull reddish brown, but is evidently intended to be dark-faced and is indeed a typical example of Danubian carboniferous ware. Decoration is provided by coarse incisions, forming ribbons filled with rough dots scattered about unevenly. White filling is not used, and spiral patterns first occur near the top of *Vinča I* at a depth of 6.15 m. The shapes are unfortunately virtually unknown. The jar neck, shown covered in Fig. 10, however, is made of this fabric. At *Tordos* and, more rarely, at *Csóka* and near *Vršac*, square-mouthed bowls were manufactured in this ware.

*Other sites*

*Pottery*

*Fabrics*

*Coarse dark-faced ware*

*Square-mouthed dishes*

<sup>1</sup> Stocký, *PZČ.*, p. 39, considers the settlements at Karaši in Syrmia and Aradac near Bečkerek in Banat (*Starinar*, 1923, p. 175) older than *Vinča I*.

<sup>2</sup> Material at Szeged.

<sup>3</sup> Material at Cluj. See Roska, *Sta-*

*țiunea dela Turdaș* (Publicaț. Muzeului Jud. Hunedoara, Deva, 1928).

<sup>4</sup> Material at *Vršac*.

<sup>5</sup> Though 'anthropomorphic lids' are found at Gradac, the bulk of the material seems to belong to subsequent periods.



- Polished black ware* 2. For smaller vessels at all sites a fine polished black fabric was used; carinated bowls are among the shapes.
- Burnish-decorated wares* 3. Both at Vinča and Tordos this ware is occasionally decorated either (a) by uneven burnishing, leaving shiny black streaks on a dull grey ground;<sup>1</sup> or alternatively (b) by shallow flutings<sup>2</sup> or ribbings. Both techniques may be applied to the different sides of the same vase, and both are in fact identical with the process of burnishing itself. Above the 6·15 m. level spirals in both techniques occur. Both fabrics survive into the later settlements.
- Black-topped ware* 4. 'Red-slipped ware' was encountered from a depth of 8·2 m. and above at Vinča, and there was used exclusively for goblets with solid feet. At Tordos<sup>3</sup> the fabric is more widely represented. It is clear that only the lower part of the vessel was red, which has been exposed to the air; the top and the interior have usually been blackened by smoke, ash, and reducing gases, so that an effect resembling Egyptian black-topped ware is produced (the vases were evidently fired inverted).<sup>4</sup> The same fabric is found on the 'Podporany frontier' near Vršac.
- Forms* The forms in use seem to have included globular bottles with short necks, carinated and other types of dish and goblets with solid feet (in red-slipped ware). Miniature vases were very common everywhere. Handles were not in use, but vessels were generally provided with lugs perforated for a cord. Sometimes the lugs are moulded to represent animal heads, becoming purely decorative. Such plastic animals often sit on the rims of dishes and appear first at a depth of 8·2 m. at Vinča and recur near Vršac and at Csóka; the modelling is best on the oldest specimens. Some forms deserve special mention.
- Anthropomorphic lids* Anthropomorphic lids (Fig. 10) are found at Vinča principally between 8·2 and 4·6 m. Analogous lids come from Csóka and Tordos. Vases with plastic human figures on the walls (Fig. 12) were picked up at depths of 7·9 m. and 6·8 m. at Vinča and recur at Csóka and Tordos. Square or triangular 'altars' occur in the very lowest levels; an ambiguous fragment was found 10·03 m. deep at Vinča. There are triangular forms from Vršac (Podporany) and Tordos.
- Figurines* Many of these vessels doubtless served ritual purposes. More insight into the religion of the prehistoric people is

<sup>1</sup> Frankfort, *Studies*, ii, p. 24.<sup>2</sup> Termed by Vassits the 'Technik der eingedrückten Ornamente'.<sup>3</sup> *ZfE*. xxxv. 1903, p. 439.<sup>4</sup> For the technique cf. Frankfort, *Studies*, ii, p. 64.





FIG. 9. Profile of Vinča



FIG. 10. Anthropomorphic lid, Vinča.  $\frac{2}{3}$



FIG. 11. Figurine, Vinča I.  $\frac{3}{4}$

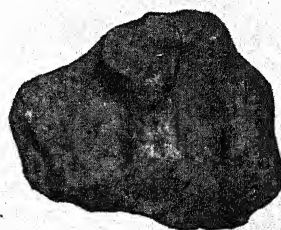
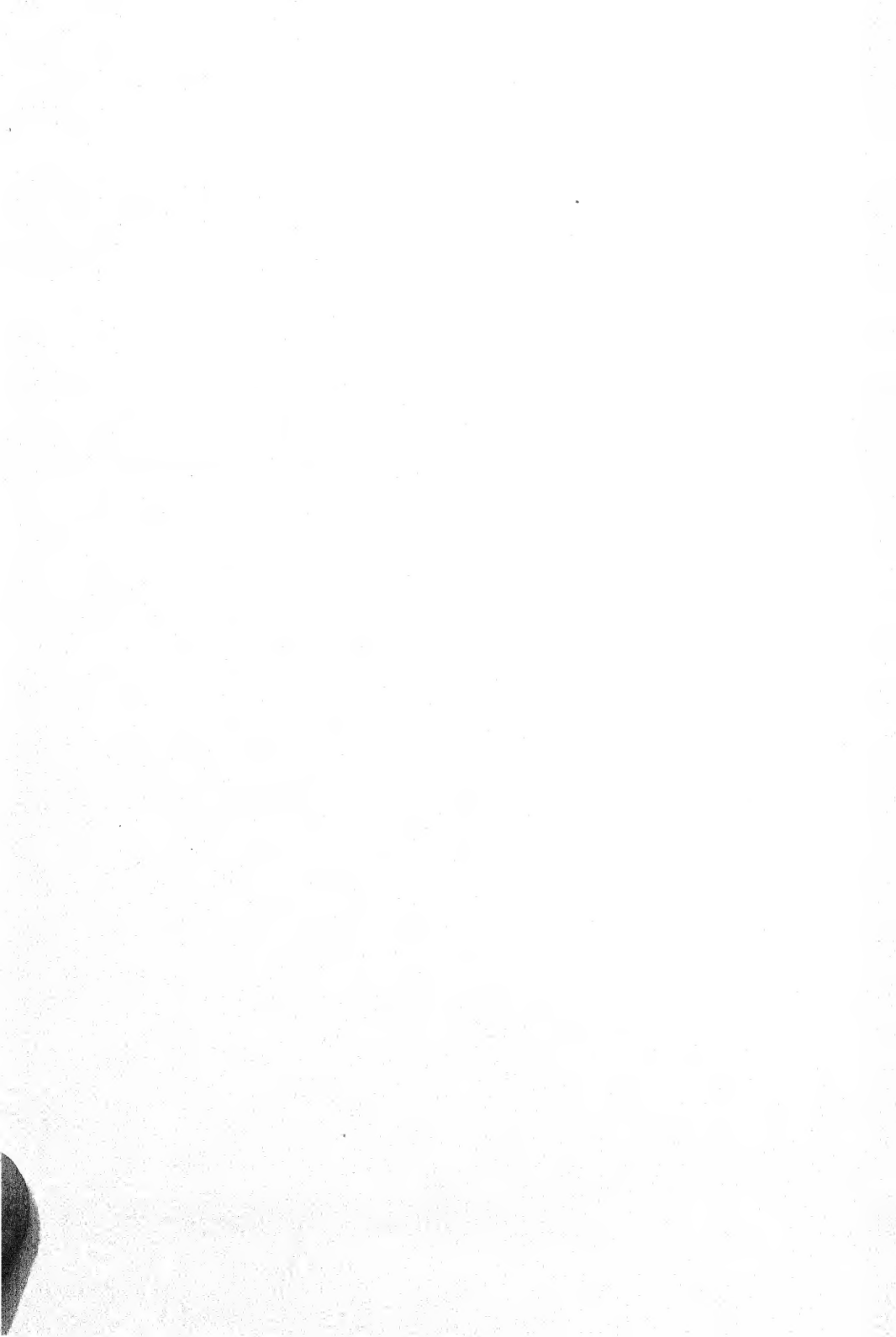


FIG. 12. Sherd with human bust in relief. Csóka.  $\frac{2}{3}$



afforded by the numerous clay figurines. Those from Vinča are all crudely modelled; the face is triangular with a wart for the nose; the legs are unseparated; the only article of clothing indicated is a necklace. The other sites have yielded similar rough idols. All such figures seem to be females, depicted in an erect posture (Fig. 11).

Celts (Fig. 13) are very numerous, but usually roughly made out of soft, shaley stones. All conform everywhere to the type

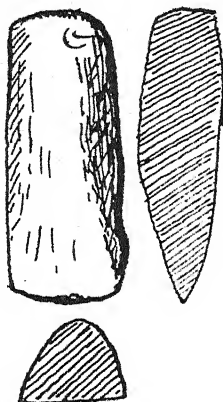


FIG. 13. Celt from Vinča, after Vassits.  $\frac{1}{2}$

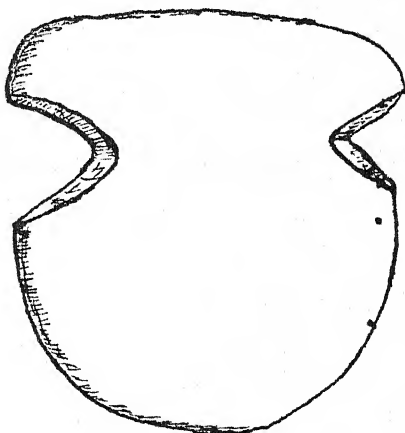


FIG. 14. Amulette shaped like an Egyptian axe, Vinča, from a sketch.  $\frac{1}{4}$

flattened on one face and strongly arched on the other that we shall find typical of the whole Danubian area. Such implements could be used as adzes, but would make ideal hoe-blades. In the Cluj Museum Dr. Roska has arranged the specimens from Tordos in several series illustrating a theoretical evolution from very plump, almost prismatic types, to a comparatively flat implement. No perforated implements were found in the course of scientific excavation in Vinča I or II. Disk-shaped mace-heads and some bored hammer-axes with rounded butts from Csóka may, on the strength of Moravian analogies, be assigned to the period of Vinča I.

*Mace-heads*

The flint implements, including blades, end-scrapers, and borers, are poorly worked. Arrow-heads were not found in Vinča I.

*Flint implements*

The bone-work is not very typical and is limited to simple borers and wedges; perforated antler picks did not occur. More important are the deer's horn harpoons from Vinča and

*Harpoons*

Csóka (Fig. 17), for they show how much the inhabitants of these sites appreciated the good fishing of the Danube. Fish-hooks do not yet appear.

*Copper* At a depth of 9.5 m. at Vinča a copper bead was found and small scraps of metal are not uncommon at all levels. Several larger copper implements have been found at Csóka and Tordos, but the levels are not ascertained. In the lower strata at Vinča a model shoe last-celt of beautiful nephrite was discovered, a parallel to which formed part of a hoard at Csóka.

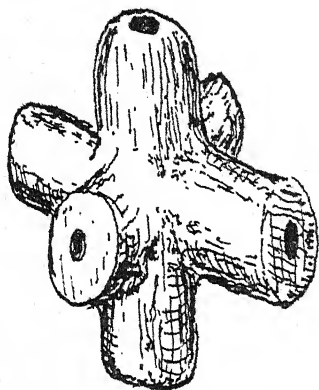


FIG. 15. Six spiked head of clay, Vinča, from a sketch.  $\frac{1}{4}$ .

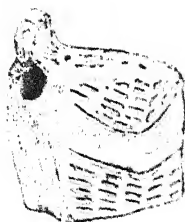


FIG. 16. Hut-model, Tordos, after Hoernes.

*Ornaments* Ornaments are abundantly represented and include imported substances. The hoard from Csóka gives the best idea of the trappings of the neolithic folk. It included an amulet like Fig. 14, and a large 'bulla' of (?) marble, beads of *Cardium* and *Pectunculus* shells, perforated boars' tusks, and a fragment of a bone clasp like the nephrite clasp from Vinča. Amulets of the same type are found at Vinča at depths of 7.2 and 6.8 m. and again at Tordos. Among the beads we may probably include curious six-spiked objects of clay found at Vinča, Csóka, and Vršac<sup>1</sup> (Fig. 15).

Buttons were made of stone, bone, or shell. They are usually conical with an almost horizontal perforation on the flat side. At Vinča such buttons occur at a depth of 6.4 m. and in all subsequent layers. Parallels come from Csóka, Tordos, and the Podporany site near Vršac. Csóka has yielded many rings of deer's horn. Two or even three are often connected together,

<sup>1</sup> There is a four-spiked clay bead from Tordos.

and such a series of rings was found in position on a skeleton's fingers.<sup>1</sup>

Bracelets both of shell and stone were worn. The shell *Bracelets* bracelets are found at Vinča from the 7-8 m. level upwards, and are perhaps made of a local fossil mussel shell.<sup>2</sup> Stone bracelets with a triangular cross-section<sup>3</sup> begin to appear 9 m. deep at Vinča, and recur at Tordos and in the Podporany station near Vršac.

On many sherds from Tordos and Vinča and a few from the *Script* Kosluk valley near Vršac curious marks suggestive of writing appear.<sup>4</sup> They have been scratched in the dry clay, generally on the bottom of the vase, and may be proprietary marks.

The inhabitants of Vinča lived in irregular oval huts, partly *Houses* excavated in the soil. The roof must have been made of wattle and daub, the burnt remains of which are frequently visible. Tordos offers us the model of such a hut as it would look if removed bodily out of the soil (Fig. 16). It differs from the Vinča huts in being rectangular.<sup>5</sup>

The cemeteries of Vinča and Tordos have not been dis- *No* covered. At Csóka several skeletons have been disinterred, and *burials* one, being accompanied by a harpoon, may belong to our *found* Period I.<sup>6</sup> One skull has been described,<sup>7</sup> but it is still uncertain whether it belonged to the first period. The cranium was high vaulted but distinctly brachycephalic, index 84.9. The retreating forehead and marked prognathism gave it a primitive and almost bestial look. It is described as related to the 'Dinaric' and 'East Baltic' types.

There is no doubt that the early Danubians were regular *'Trade* farmers as well as fishers, but no reports on cereal or animal remains are as yet available. But early man on the Middle Danube evidently engaged also in some sort of trade. That is proved by the presence in the settlements of foreign substances, marble, nephrite, *Cardium* and *Pectunculus* shells, and probably also by the copper beads. Vinča gives some indication of what was exported in exchange; Professor Vassits noted, even in the lower levels, pieces of crude cinnabar ore.<sup>8</sup> The sub-

<sup>1</sup> *Dolgozatok*, Szeged, 1925, pp. 21 ff., 1927, p. 84.

<sup>2</sup> So Vassits; but Popov definitely calls them *Spondylus* shells in *Izv. Bulg. Arch. Druz.* vi (1916), p. 90.

<sup>3</sup> Prof. Vassits thinks the Vinča specimens were vase-supports. They are certainly rather rough.

<sup>4</sup> The Tordos signs are discussed in

detail by Schmidt, *ZfE.* xxxv, p. 457. Cf. *Antiquity*, i, p. 88.

<sup>5</sup> *Real.* v, p. 223.

<sup>6</sup> *Dolgozatok*, 1927, p. 84.

<sup>7</sup> *Ibid.* 1926, p. 180.

<sup>8</sup> Verbal information; in *PZ.* ii, p. 31, 4-6 m. is given as the provenance of the earliest fragment.

stance was undoubtedly derived from the deposits of Šuplja Štena, for which Vinča is the natural port and where there are traces of ancient shafts. The situation of the other chief sites is also significant. Tordos lies adjacent to the chief Transylvanian goldfields on an auriferous river. Csóka is a natural link between Tordos and Vinča. The importance of all three sites must have been largely due to their command of a prehistoric trade route between the gold-washings and the Aegean. Herodotus' description of the Agathyrsi as living on the Maris, a tributary of the Danube, shows that even in the fifth century direct or indirect intercourse between them and the Greeks was established along this route and not across the Transylvanian Alps.

*Sites  
mark a  
trade  
route*

*Aegean  
connex-  
ions  
Pot-  
fabrics*

The whole of the civilization just described is bound up intimately with the culture of the East Mediterranean and Anatolia. The commonest pottery is really a poor variant of 'black Mediterranean ware'.<sup>1</sup> Its punctured ribbon ornament finds parallels in pre-dynastic Egypt,<sup>2</sup> in neolithic Crete, at Tiryns,<sup>3</sup> in the early Cycladic tombs of Euboea,<sup>4</sup> at Yortan, and at Troy. Ribbed or fluted ware, identical with that from Vinča and Tordos, is known from Macedonia, Thessaly,<sup>5</sup> and Phocis<sup>6</sup> in Period II, and is also found at Yortan and in Aegina. Vassits is probably right in thinking that the rippled ware of neolithic Crete is the ultimate prototype for this fabric.<sup>7</sup> A burnish-decorated pottery, equivalent to our class 3a, has the same spatial and temporal distribution. The red-slipped ware has been compared by Vassits to that of Troy II, by Schmidt,<sup>8</sup> more plausibly, to the 'black-topped' ware of pre-dynastic Egypt, and in fact shapes very like Petrie's<sup>9</sup> B 14, B 92, and B 73 were made in it at Tordos. Actually its exact analogues are found at Yortan, Hissarlik, and elsewhere in Anatolia and even in Cyprus and Macedonia;<sup>10</sup> there they represent a natural and spontaneous transition from black to red ware, as Frankfort<sup>11</sup> has shown.

*Vases* The anthropomorphic lids immediately call to mind the well-known lids from Troy II, though the parallelism is by no

<sup>1</sup> Forsdyke, *Catalogue*, pp. x f.

<sup>2</sup> Petrie, *Prehistoric Egypt Corpus*, pl. xxvi.

<sup>3</sup> Frankfort, *Studies*, ii, pl. III, 2 and 4.

<sup>4</sup> Papavasileios, *Περὶ τῶν ἐν Εὐβοίᾳ ἀρχαίων ταφῶν*, pl. H, 6.

<sup>5</sup> W. and T., pp. 102 and 114; it occurs with B wares at Tsangli long

before Minyan sherds appear.

<sup>6</sup> Frankfort, *Studies*, ii, pl. iv.

<sup>7</sup> Frankfort, *l.c.*, p. 54, denies any connexion.

<sup>8</sup> *ZfE.*, 1903, p. 460.

<sup>9</sup> *Op. cit.*, pls. II, VII, VIII.

<sup>10</sup> Gjerstad, *Cyprus*, p. 95.

<sup>11</sup> *Op. cit.*, p. 64.



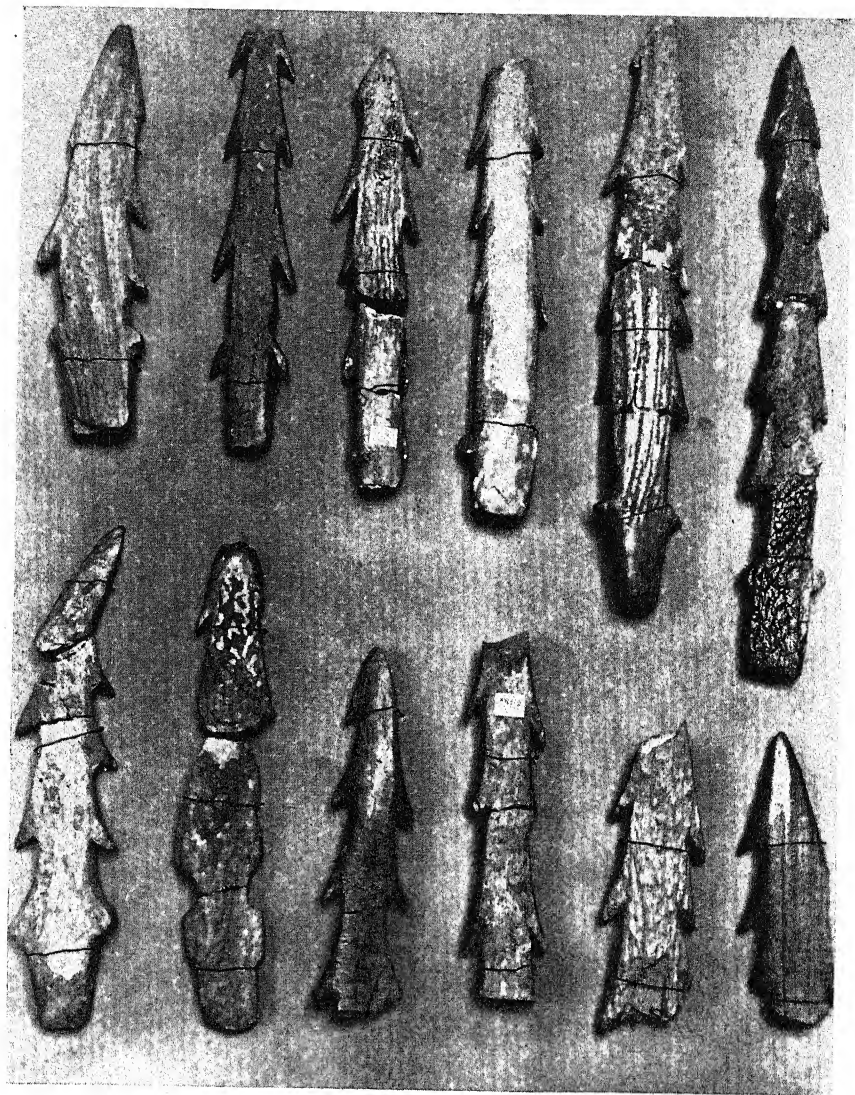
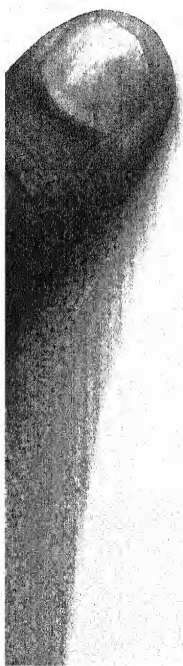


FIG. 17. Horn harpoons, Csóka. Varosi Museum, Szeged. Natural size.





means exact. Parallels are found much farther east at Assur<sup>1</sup> where also vases with figures in relief were being manufactured before 2500 B.C.<sup>2</sup> To the triangular or rectangular 'altars' the earliest period in Thessaly offers numerous analogues.<sup>3</sup>

Figurines belong to the very essence of the Aegean and Anatolian cultures. The Danubian specimens bear a general likeness, especially in the emphasis on the buttocks, to the whole family of Aegean and West Asiatic plastic figurines.

Even the 'shoe-last' celts with one face flat and the other convex have relatives in Thessaly I<sup>4</sup> and, more rarely, at Troy.

The use of marble and other stones as beads or pendants, and of shell and stone for bracelets, is so widespread in the Aegean area that no special comment is required. Some of the ornaments deserve more attention. Amulets like Fig. 15 have been compared by Vassits<sup>5</sup> to Minoan double axes. A more apt comparison would be the Egyptian copper axes<sup>6</sup> of Petrie's type A 63 and their flint imitations; but perhaps the real prototypes are to be sought in the conventionalized stone figurines of Troy.<sup>7</sup> The conical stone and shell buttons bored on the flat face may be compared to those from Dimini.<sup>8</sup>

Finally, many of the curious signs scratched on the vases from Vinča and Tordos agree with the marks on Egyptian vases of predynastic and protodynastic times. Others recur in Crete and the Cyclades, and the correspondence between the marks from Tordos and figures incised on clay whorls from Troy is particularly close.<sup>9</sup>

In addition to points of contact with the Aegean area just enumerated we should mention links in the intervening region. These lie not so much in the Vardar valley nor yet up the Morava, where remains comparable to Vinča I are practically absent, as on the Lower Danube and the Black Sea coasts. The first connected complex of remains known from the Bulgarian shores of the Danube (the Roumanian bank is unexplored) belongs to the 'chalcolithic' culture with painted pottery. But 'wherever strata are struck which suggest an earlier date' we find pottery which, if it points in any direction at all,

*Figurines*

*Bracelets  
and  
amulets*

14

*'Script'*

*Links on  
the Lower  
Danube*

<sup>1</sup> S. Smith, *Assyria*, p. 69.

<sup>2</sup> Andrae, *Ischtartempel*, pl. 23, m-o.

<sup>3</sup> W and T., figs. 42d, 57g, &c.

<sup>4</sup> Type B of Tsountas, Wace and Thompson.

<sup>5</sup> *Starinar*, 1908, pp. 99 f.

<sup>6</sup> *Tools and Weapons*, A 63; cf. *Preh. Egypt*, xxvi, 20 (stone).

<sup>7</sup> A rough marble figure, very like Tsountas, A-Z, pl. 37, 12, was actually found at Vinča, but not in the course of regular excavation.

<sup>8</sup> Tsountas, A-Z, pl. 43, 1.

<sup>9</sup> Schmidt has tabulated the correspondences *ZfE. l.c.*, p. 459. Cf. Petrie, *Formation of the Alphabet*.

is clearly related to the Middle Danubian wares described above.<sup>1</sup> And other objects found in later deposits both disclose a survival of the older tradition and afford links with other areas. Let us cite the horn and bone harpoons from Ruse (Ruschuk)<sup>2</sup> in Bulgaria, Czernawoda in the Dobrudja,<sup>3</sup> and Kadi Keui opposite Constantinople on the Bosphorus,<sup>4</sup> and the shell bracelets found in the mounds of North Bulgaria,<sup>5</sup> and in a hoard at Koludje<sup>6</sup> in the same country.

*Ethnic explanation*

Much of the cultural similarity between the Lower Danube and the Aegean countries may no doubt be explained by 'trade'. But, taken as a whole, the 'Aegean' features in the culture of Vinča I are too fundamental and far-reaching to be the result of mere external relations or cultural borrowing. The whole civilization is saturated with 'Aegean' elements; south-eastern constituents are interwoven in its inmost texture. Moreover, we have no evidence of any population in Serbia or Western Transylvania since Aurignacian times, so who was there to borrow elements of culture from the south or engage in 'trade' with the 'Aegean'?

Our conclusion is that the first settlers at Vinča and the allied sites were themselves possessed of a cultural tradition that expressed itself in the production of objects similar to those found in Thessaly, Crete, and Anatolia. The first colonists would in fact have been fishers sailing up-stream in pursuit of their prey who found a congenial dwelling-place on the löss banks, washed by the river. But, sooner or later, they discovered other advantages—the cinnabar of Suplja Štena and the gold of the Transylvanian and Banat rivers. These they bartered with their kinsmen farther south, and so the little villages of fishers on the shores of the Danube and the Tisza became regular trading colonies to which Aegean products found their way through barter. Such products would be in accord with the traditions of the first settlers, and so would be all the more readily assimilated and reproduced locally.

It would be vain to seek to localize the original starting-point of the first colonists. Their spread had been a gradual process of which Vinča and Csóka reveal only the final stages. Earlier halting-places should lie on the Lower Danube<sup>7</sup> and the Black

<sup>1</sup> Frankfort, *op. cit.*, pp. 32 f.

<sup>2</sup> *Real.* ii, pl. 91.

<sup>3</sup> *PZ.* xv, p. 23, fig. 37.

<sup>4</sup> *Fv.* 1922, p. 119, fig. 26.

<sup>5</sup> *Izv. Bulg. Arch. Druzh. l.c.*, here

certainly of *Spondylus* shell.

<sup>6</sup> Cited by Vassits, *PZ.* ii, p. 34.

<sup>7</sup> Where Dr. Frankfort has in fact found them.

Sea. The agreement with the civilization of Troy II—the red-slipped ware and the anthropomorphic lids—is no doubt particularly close. That in no wise obliges us to assume that Vinča I was a daughter of Troy II.<sup>1</sup> On the contrary, really characteristic products of Trojan industry, such as the varied jugs and cups with true handles, are totally absent, and their absence would be inexplicable on the assumption of a direct filiation. Rather should we regard Troy II and Vinča I as separate branches put forth by one ancestral trunk whose roots spread to Crete and Mainland Greece and across Asia Minor. Trojan influence would supply secondary accretions because Troy controlled Danubian trade with the Aegean, and contributions from that direction would be more readily absorbed in view of the ethnic and cultural kinship of both areas in the past. The development of the transitional red and black fabric both in Europe and Anatolia implies the maintenance of regular communication during the period of transition between Troy I and Troy II; the face urns may be explained as a result of this intercourse.

Dr. Frankfort, in a work published after this chapter was written, has inverted many of these relations. We shall indeed see in Chapter V that a certain reflex current from the Danube basin may well have reached the southern part of the Balkan Peninsula. That in no sense destroys the validity of the parallels cited above as proofs of an 'aboriginal' community of culture between the oldest Danubians and the oldest inhabitants of both sides of the Aegean basin—a community which our author himself admits.<sup>2</sup>

<sup>1</sup> As Prof. Vassits has so ably argued.

<sup>2</sup> *Studies*, ii, pp. 57-60.

## IV

### DANUBIAN I

*Unsuitability of Middle Danube for settlement*

REMAINS corresponding to Vinča I have not as yet been found farther north of Belgrade on the Danube in Serbia and Southern Hungary. The reason lies probably in the nature of the country. From the moment it turns northward after parting with the Drave, the Danube flows through a swampy valley. Its immediate banks are alluvium, exposed to frequent floods; in Early Neolithic times—the Atlantic period—this tract of alluvium must have been a veritable swampy jungle that interposed a real barrier between the river and the high löss terraces to the west. The Danube-Tisza plain on the east is likewise largely alluvial and subject to inundation. Even to-day, despite all the drainage works of the last sixty years, one can see large areas under water even in the late spring.

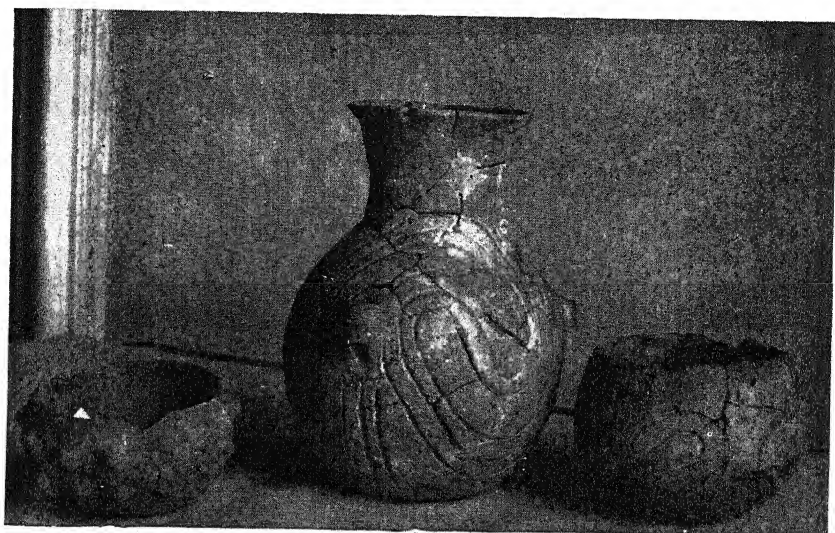
Now we have seen that the Vinča I culture was restricted to the löss and flourished above all where the löss actually touched the waterways. These conditions are not fulfilled in Hungary below Buda-Pest. If, then, the culture in question came in the first place by water and were subsequently spread up-stream in the same way, we should not expect to meet its emanations much below the second Danube elbow. And it is just in this part of North Hungary and Slovakia that a new series of remains comes to light. Farther north the evidence is fuller, and it is better to begin our study with the main löss region in Moravia.

#### I. DANUBIAN I a

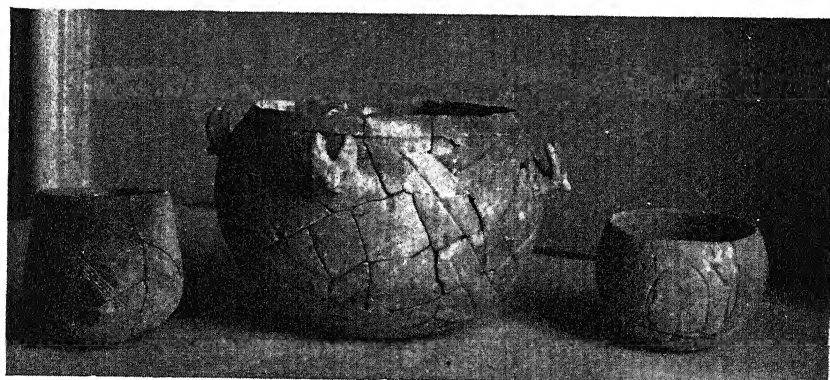
In South-West Slovakia, Lower Austria, and Moravia, and all over the löss lands to the north as far as Cologne, Stendal, Glogau, and Sandomierz, we discover at the beginning of the Neolithic Age a peculiarly uniform culture. It exhibits many signs of affinity with that of Vinča, and may be justly termed Danubian. Three main phases may be distinguished as well as certain local groups.

The most characteristic and widespread group is that characterized by the so-called 'spiral-maeander' pottery. This was also, at least in Moravia,<sup>1</sup> the oldest group, and may therefore be styled Danubian I a.

<sup>1</sup> Palliardi, 'Die relative Chron.,' WPZ. i; the main source for the neolithic period in Moravia.



*a* *b* *c*  
FIG. 18. Danubian I a pottery, Moravia. M. Brno



*a* *b* *c*  
FIG. 19. Danubian I a and I b pottery, Moravia. M. Brno





The distinctive pottery of this group is found from the löss plains along the Nitra and Vag (Waag) in Slovakia,<sup>1</sup> and the Leithagebirge in Lower Austria<sup>2</sup> right through the Moravian<sup>3</sup> löss country into Galicia<sup>4</sup> and Silesia.<sup>5</sup> It covers all the available land in the Upper Elbe valley and reappears in many parts of Saxo-Thuringia.<sup>6</sup> The Upper Danube valley round Straubing and Regensburg<sup>7</sup> is filled with it, and thence it spreads down the Main and Neckar<sup>8</sup> to the Rhine. On that river it is found up-stream as far as Kolmar,<sup>9</sup> and travels down to Cologne<sup>10</sup> and thence into Belgium and Holland. (Map I.)

*Distribution*

Throughout this vast area the uniformity in ceramic and lithic products is truly extraordinary. Naturally there are minor local variations to be noted in due course. Moreover, the ceramic sequence established by Palliardi for Moravia does not hold good altogether for the Rhineland. With these reservations Danubian Ia may be treated as a whole. The material may be summarized as follows:

Danubian Ia pottery, save in the case of large jars, is made of fine well-levigated clay. The surface is smooth but never covered with a slip of finer clay nor burnished, though vases from two sites<sup>11</sup> in Moravia have been rubbed over with graphite. The finest specimens are slate grey in colour, but muddy tones are not uncommon results of uneven firing.

*Pottery*

Only two main shapes were in vogue: the hemispherical bowl and the bottle with short neck (Fig. 18). In Moravia and Bohemia deep dishes with a flat base and shaped like an inverted truncated cone are occasionally encountered. The rims receive no special treatment. True handles are unknown, but all types of vessel are equipped with lugs, generally three or a multiple of three in number.<sup>12</sup> On bottles the lugs may grow into small grips horizontally or vertically pierced.<sup>13</sup> In Southern Moravia, on the other hand, they are developed into animal heads (Fig. 19 B) or fashioned to suggest a fist (Fig. 20). A bowl from Steigra in Thuringia<sup>14</sup> is equipped with a narrow tubular

*Forms*

<sup>1</sup> *IIA.* (Prague), ii, p. 338.

<sup>2</sup> Franz, *Österreich*, p. 6; Mahr in *Völkerkunde*, 1926, p. 23.

<sup>3</sup> *Pravěk*, 1904, p. 19 (map); Červinka, *MS* (1908), pp. 55-69; Gottwald, *PS.*, 9-14.

<sup>4</sup> Kozłowski, *Młodsza*, pp. 44 f. and map.

<sup>5</sup> Map in Wahle, *Ostdeutschland*.

<sup>6</sup> *PZ.* v, p. 280; ix, p. 118; ii, p. 343; *Real.* viii, p. 237.

<sup>7</sup> Reinert, *Chron.*, p. 82.

<sup>8</sup> Paret, *Wurt.*, pp. 34 f.

<sup>9</sup> *PZ.* vi, pp. 30 f.

<sup>10</sup> *OAM*, p. 40.

<sup>11</sup> Předmost and Boskovštýn, *Real.* ii, p. 61.

<sup>12</sup> Stocký, *Chronol.*, p. 5.

<sup>13</sup> e.g. Gottwald, *op. cit.*, p. 10 (Moravia); Hoernes, *Urges.*, p. 297, 3 (Thuringia); Forrer, pl. 11b (Alsace).

<sup>14</sup> *VAT.*, p. 85, pl. III, 30.

spout just below the rim. In addition to such small vases the settlement at Pflaumheim (near Odernburg) on the Main yielded a huge pithos over a metre high! It must be late.

*Decor-  
ation*

The decoration consists of rather shallow continuous lines incised in the soft clay. The lines generally go in parallel pairs forming a ribbon. In a later phase small dimples, touching the lines, are added, producing the effect of a stave of music, or the ribbon, as at Vinča, is filled in with dots. The 'music note' and 'punctured ribbon' ornaments are later than the simple ribbon in the part of Moravia explored by Palliardi. Besides incisions, applied plastic ridges are used.

*Spirals  
and  
maeanders*

The patterns formed by the incised or plastic ribbons fall into two categories. On the majority of vases a 'free' style

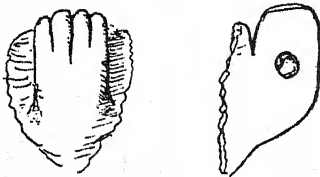


FIG. 20. Fist-shaped lugs, Moravia, from a sketch, M. Brno

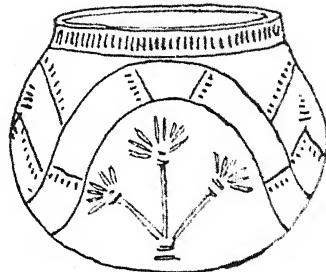


FIG. 21. Palm on a Danubian I sherd, from Heilbronn, after Schliz

reigns.<sup>1</sup> The prevailing motives in this series are the spiral and the angular spiral or maeander, often forming a continuous belt but sometimes restricted to closed horizontal S figures. The motives are executed most tastefully and perfectly in the earliest vases and in the central regions. On late vessels and in remote districts like Hesbaye the spirals are degenerate and distorted: among the products of disintegration are various arcs, Z figures, and what Forrer<sup>2</sup> regards as a representation of the vulva.

*Skeuo-  
morphic  
designs*

Other vases, however, exhibit distinctly skeuomorphic patterns—generally chevrons below a horizontal ribbon—representing a sort of sling in which the round-bottomed prototype must have been hung.<sup>3</sup> To this class belong bowls ornamented

<sup>1</sup> Frankfort, *Studies*, ii, p. 25, rightly remarks that the arrangement is tectonic in so far as the field is enclosed by a line parallel to the rim.

<sup>2</sup> *Nouvelles acquis.*, p. 14.

<sup>3</sup> This origin is most obvious where the pattern is in relief, as Stocky, *BAP* IV, 2. Cf. Sophus Müller in *MSAN*.

on the base with concentric squares, the corners being united by incised diagonals.<sup>1</sup> Crosses<sup>2</sup> occur among the degeneration products.

Schliz<sup>3</sup> considers the skeuomorphic patterns the older as they were used also on 'stroke-ornamented' ware. Menghin<sup>4</sup> regards the maeander at least as an original element and the spiral as an early derivative. The former view is the more likely.

In late vases the free style prevails, but shows the influence of the skeuomorphic patterns. We also encounter quasi-naturalistic figures—palms<sup>5</sup> (Fig. 21) or 'frogs';<sup>6</sup> the last-named figures are in fact more probably representations of a human figure with upraised arms such as that shown in relief on Fig. 12. A sherd from Selce, close to Prague, looks as if it were inscribed, but the 'signs' may be purely decorative.<sup>7</sup> A vase, now at Stuttgart, shows apparently a plastic representation of the human face. In addition to incisions and plastic strips, knobs were already used decoratively in this period in Moravia (Fig. 18 A).

*Naturalistic motives*

Finally, in several areas a sort of painting with unfixed colours, applied after the firing of the vessel, has been observed. In Bohemia<sup>8</sup> the paint in a sort of pitchy flux was applied to vases that had already been decorated by incisions both in Danubian Ia and Danubian Ib styles. Vases from Ettersburg near Weimar had been coloured red.<sup>9</sup> Schliz found some earth colours on spiral-maeander sherds near Heilbronn,<sup>10</sup> and Forrer<sup>11</sup> has observed a red crusting at Stutzheim in Alsace. Instances of coloured ornamentation are confined to late vases; they are probably due to influence from the Danubian II culture further east.

*'Painting'*

It was not apparently only vases that the Danubians moulded out of clay. A very rough head was found in a hut foundation with the oldest linear ware at Boskovštýn.<sup>12</sup> A fragment of a second comes from Nosswitz in Silesia.<sup>13</sup> Heads are modelled

*Figurines*

1920-5, p. 237. Dr. Jenny, in his interesting analysis of Danubian art (*MAGW.* lviii, pp. 1 ff.), has entirely missed the skeuomorphic origin of this series. For precisely parallel results in Nubia see Junker, *El kubanieh-Nord*, pls. 5 and 6 (Nubian C-group).

<sup>1</sup> Moravia, Lower Bavaria (Museums at Brno and Regensburg).

<sup>2</sup> Stocký, *PZČ.*, pl. xxvii, 11.

<sup>3</sup> *PZ.* ii, p. 131; cf. p. 51 below.

Hoernes, *Urges.*, p. 774.

<sup>5</sup> *PZ.* ii, p. 137 (Heilbronn).

<sup>6</sup> *Mannus*, ix, p. 55 (Bohemia); Stocký, *PZČ.*, pl. xxvii, 5.

<sup>7</sup> *Mannus*, xi-xii, p. 379.

<sup>8</sup> The actual colours are lost and only the flux survives. *Mannus*, iii, pp. 225 ff.; Schráníl, *Böhmen*, p. 42.

<sup>9</sup> *VAT.*, p. 263.

<sup>10</sup> *PZ.* ii, p. 138, and pl. 29.

<sup>11</sup> *Op. cit.*, p. 14.

<sup>12</sup> Schráníl, *Böhmen*, p. 43.

<sup>13</sup> *SV.* vii, fig. 52 and p. 18.

on the late linear sherds from Bohemia.<sup>1</sup> In Central Germany a slightly steatopygous figurine from Lommatsch in the State of Saxony<sup>2</sup> may belong to Danubian Ib. In the Rhineland figurines and even naturalistic plastic modellings on vases are totally lacking.

**Celts** The universal stone implement of the Danubian I culture is the polished adze or hoe, flat on one face and arched on the other, such as we have already met at Vinča. It may be termed a 'shoe-last' celt, though strictly that name should be confined

**Bored to the narrow chisel-like specimens (Fig. 22 b). A variety of celts**

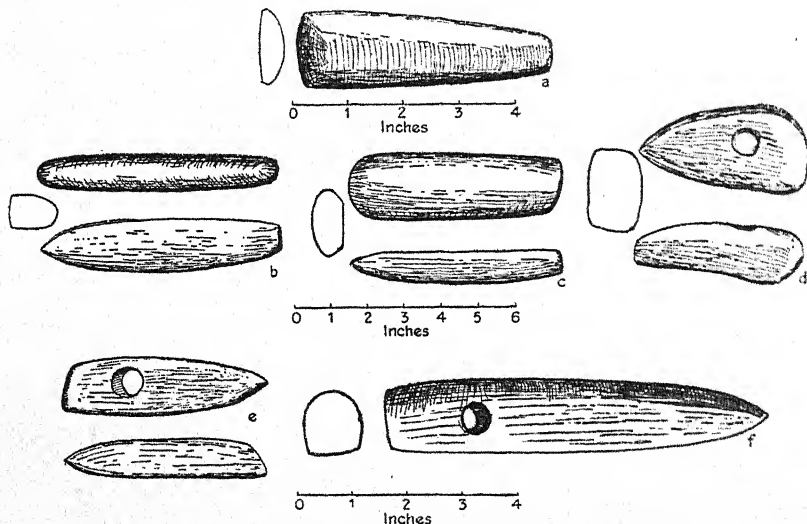


FIG. 22. Shoe-last celts

shoe-last celt is perforated for hafting with the blade either at right angles or parallel to the shaft. On the Rhine the horizontally perforated celt has been transformed into a regular axe-hammer (Fig. 22 d), a type which in Moravia would only be found in Period II. Long perforated celts like Fig. 22 f have been interpreted as plough-shares. A few stray shoe-last adzes from Bohemia have been mounted in a handle made from a hollowed deer's tine. Hard volcanic stones were rarely used; softer materials such as schist were always preferred for the manufacture of all implements.

**Disk-shaped mace** The only weapon of Danubian Ia is a disk-shaped mace-head of polished stone.<sup>3</sup>

<sup>1</sup> Stocký, *PZČ.*, p. 56, and pl. xiv, 6.

<sup>2</sup> *PZ.* i (1909), p. 401. Niklassen illustrates some other specimens in

*JST.* xii, pp. 74-9.

<sup>3</sup> Palliardi, *op. cit.*, fig. 10a; *PZ.* v, p. 392 (Wetterau).

The flint work is poor and atypical, but is said in some cases to show reminiscences of the 'Tardenoisian retouch'.<sup>1</sup> Arrowheads are not found except in the late Rhenish group. In Lower Austria and Eastern Moravia obsidian from Hungary was already coming into use during the currency of spiral-maeander ware.<sup>2</sup> *Flint, obsidian*

Nor is the bone-work in any way distinctive when taken as a whole. But at Statenice in Bohemia<sup>3</sup> very neat bone spoons were unearthed in a Danubian I a hut, and a fragmentary bone object from Dukovany, now at Brno, is decorated with a spiral ribbon bordered by fine dots quite in Danubian I style. In addition awls were manufactured from the radii and cubiti of domestic animals, and once or twice chisels of bone have come to light. *Bone spoons*

Spindle whorls are nowhere encountered, and there is no evidence for the art of weaving. *No weaving*

The most striking ornaments, worn by the Danubian I a people, were beads and bracelets made from the shell of *Spondylus gaederopus*. Such shell ornaments have been found in Lower Austria,<sup>4</sup> Moravia,<sup>5</sup> Bohemia,<sup>6</sup> Saxo-Thuringia,<sup>7</sup> and the Rhineland.<sup>8</sup> The mussel in question does not live north of the Mediterranean, but fossil *Spondylus* shells lie at no great depth in the soil, near Mainz. Forrer<sup>9</sup> contends that the Danubians used the fossil shells, but while his view may be correct for Alsace, the weight of opinion seems to be that the material usually worn was imported from the Mediterranean.<sup>10</sup> *Ornaments Imported shells*

Moreover, in late graves of the same culture at Worms,<sup>11</sup> Dr. Koehl found small pins of 'ivory' which must likewise rank as imports from the south-east. *Ivory*

In addition to foreign substances, shells of *Dentalium* (fossil), *Unio*, and *Neritina* were used as ornaments in Moravia.<sup>12</sup> Shells of *Margarita sinuosa* have been found in the settlement of Sarmsheim in Hessen. Apparently the mussel lived in the Rhine and its tributaries in those days.<sup>13</sup>

<sup>1</sup> Gumpert, *op. cit.*, p. 113; Stocký, *PZČ.*, p. 60.

<sup>2</sup> Červinka, *MS.*, pp. 568-9 (42), (50), and (64). The same material has been found in a very few deposits in Bohemia, *PA.* xxxiv (1925), p. 457.

<sup>3</sup> Stočky, *PZČ.*, p. 60.

<sup>4</sup> *MAGW.* li, p. 46.

<sup>5</sup> *Real.* ii, p. 60 (Krumlov-Kromau).

<sup>6</sup> Praha-Bubenice; Schráníl, *Böhmen*,

<sup>7</sup> *VAT.*, pp. xix and 80; *PZ.* iv, p. 376.

<sup>8</sup> *WDZ.* 1900, p. 223.

<sup>9</sup> *Op. cit.*, pp. 12 and 34; cf. *Anz. A.A.*, 1916, pp. 715 f.

<sup>10</sup> *PZ.* ix (1917), p. 54; *Rev. Ec. Anthr.* 1901, p. 294.

<sup>11</sup> *Wörmser Festgabe*, p. 27.

<sup>12</sup> Zabdovice near Krumlov, *Real.* ii, p. 60.

<sup>13</sup> *PZ.* ix, p. 49.

## Houses

The great mass of the Danubian I material is derived from settlements. In a few cases, as in the Vypustek and Kosteletk caverns near Brno,<sup>1</sup> caves were used by the Danubians as habitations, though that never happened in Bavaria. The regular dwelling-places were groups of huts on the löss, always in the vicinity of streams. No plans of a complete village are available, save in the case of the late settlement at Grossgartach near Heilbronn. Here the huts containing spiral-maeander were formed small irregular groups, in fact rather isolated clusters of farm buildings than an organized village.<sup>2</sup>

## Pit-dwellings

Of the huts themselves only an irregular oval depression, filled with ashes and refuse, survives as a rule. The hollow would normally represent the actual base of the pit-dwelling excavated in the löss. A deeper hole full of cinders would have served as a hearth.<sup>3</sup> Sometimes two such hollows are linked together,<sup>4</sup> or we have a whole complex of inter-connected hollows. A rather different structure might be inferred from the fragmentary model from Boskovštýn in Moravia.<sup>5</sup> It shows an apsidal building with a flat roof, but the walls are hopelessly broken. A third type of house is illustrated at Nosswitz in Silesia;<sup>6</sup> the plan of the building was roughly rectangular, its area being  $4 \times 3.5$  m.<sup>2</sup> The walls and roof were supported by stout posts, and a fire-place of stone stood on one side. Another house at Nosswitz measured  $2.8 \times 7.50$  m.<sup>2</sup> A similar rectangular type of house was in use in Bavaria.<sup>7</sup>

## Post houses

## Porch houses

At Sarmshheim near Kreuznach<sup>8</sup> in Rhenish Prussia a more elaborate structure was in use. The main room was almost square, the rear and side walls being each supported by three stout posts. But a porch had been added on in front by extending one side wall. The opposite wall of the porch was supported by a pair of posts in a line with the middle post of the rear wall and a pillar that stood in the centre of the main room. In this case the roof may have been gabled as at Tordos. Perhaps the whole should be reconstructed like the Erösd *megaron* shown in Fig. 58. In plan the Sarmshheim house corresponds to one containing spiral-maeander pottery at Grossgartach.<sup>9</sup> The latter was, however, excavated in the soil to a depth of 0.75 m., and post-holes were not observed. The

<sup>1</sup> JZK. 1905, p. 78.

<sup>2</sup> BRGK. x, p. 72, fig. 23; Heilbronn Festschrift, fig. 6.

<sup>3</sup> Palliardi, MPK. i, 1897, p. 237; Schráníl, Böhmen, pl. 3.

<sup>4</sup> Mannus, xvi, p. 236.

<sup>5</sup> Real. v, pl. 71 a; PZ. xi, p. 85.

<sup>6</sup> SV. vii, p. 13.

<sup>7</sup> Near Nordlingen, Germania, 1924, p. 83.

<sup>8</sup> PZ. xi, p. 71, fig. 3.

<sup>9</sup> PZ. ii, p. 139.



entry lay through a porch on one side, as at Sarmsheim, but within the main structure,  $6 \times 3.5$  m.<sup>2</sup> in area, were two 'compartments' lying about 30 cm. above the floor of the living-room.

In a further variant, as at Lissdorf<sup>1</sup> in Thuringia, the space *Pile dwellings* between the walls, marked by the post-holes, is broken up into a complex of hollows (Fig. 23). This space can hardly have been the actual floor; there must have been some wooden

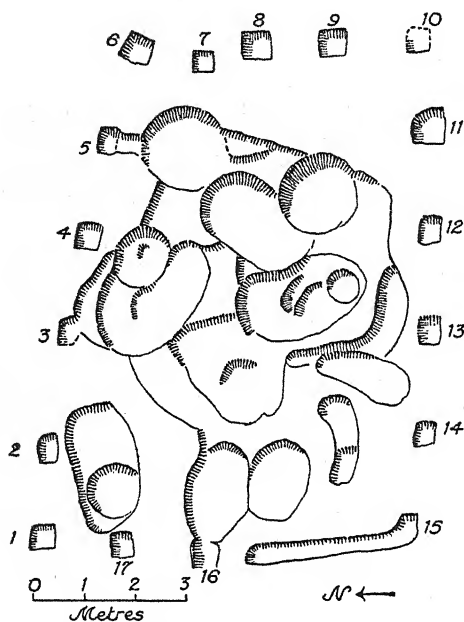


FIG. 23. Danubian I huts, Lissdorf

platform raised over it. Niklassen,<sup>2</sup> indeed, is inclined to generalize this inference and to regard the so-called hut-foundations excavated in the earth as in reality mere cellars or cooking places under the living rooms proper. The latter would have been raised above the ground on piles. Structures, such as Niklassen imagines, may actually have been in use, but some of the 'pit-dwellings' must be regarded as genuine habitations. Despite the cramped and insanitary life which they would impose, the pit-dwellings were warm and easily constructed. They were suited above all to the löss areas, since it is possible to dig a stable vertical wall in that soil.

<sup>1</sup> PZ. vi, p. 293; Real. v, p. 178.

<sup>2</sup> Mannus, xvi, p. 238.

*Graves* In comparison with the numerous hut-foundations, graves are very rare except in the Rhineland. Only one—probably part of a cemetery—has been studied in Lower Austria,<sup>1</sup> and two in Moravia.<sup>2</sup> In Bohemia<sup>3</sup> and Saxo-Thuringia interments are commoner. In nearly every case the body was interred with the legs gently flexed. In the graves near Worms and at Krumlov in Moravia lumps of red ochre were placed beside the corpse. The remaining grave goods would include ornaments, particularly *Spondylus* bracelets or beads, stone implements, and a vase. In one such grave at Cannstatt near Stuttgart the skull had been trepanned—the earliest case of the operation in Central Europe.

*Trepanation*  
*Infants buried in houses* In some hut foundations on the Neckar and elsewhere<sup>4</sup> infants' skeletons had been buried within the house walls.

*Cremation* Inhumation was not, however, the only rite among the Danubians. In south-west Germany, most particularly on the Wetterau, well attested cases of cremation are becoming quite common. Near Hanau<sup>5</sup> the ashes were laid in the bare earth in a hole, dug sometimes in the floor of the hut, sometimes outside, and once in the corner of a regular trench grave that would have held a complete skeleton. Very few grave goods accompanied the ashes, but a regular funeral gift was a necklace of rectangular, triangular, and oval schist plaques engraved with linear and punctured designs such as might appear on contemporary vases. Similar plaques have been found further east at Diemarden, near Göttingen. A burial of cremated remains in a spiral-maeander pot has been reported from the State of Saxony.<sup>6</sup> More cremation burials have been detected under the floors of huts in Bavaria.<sup>7</sup> Such burials are naturally easily overlooked, and it is quite possible that they will prove to be more widely distributed. The rarity of Danubian I a interments in Moravia, Austria, and Silesia is certainly suspicious.

*Craniology* The rarity of graves in what seems to be the original centre of Danubian I culture leaves us in some doubt as to the physical characters of its authors. Schliz has, however, described skulls of this period<sup>8</sup> from graves at Krumlov in Moravia, Vohonč in Bohemia, Erfurt in Thuringia, and Cannstatt in Wurtemberg. These are dolichocephalic or just mesaticephalic

<sup>1</sup> *MAGW.* li, p. 46.

<sup>2</sup> *Real.* ii, p. 60.

<sup>3</sup> Stocký, *PZČ.*, p. 63.

<sup>4</sup> *PZ.* ii, p. 139.

<sup>5</sup> *PZ.* iii, pp. 1-40 (Wolff).

<sup>6</sup> *Mannus*, xviii (1926), p. 86.

<sup>7</sup> *BUF.* iv, *Germania*, 1924, p. 83.

<sup>8</sup> *AfA.* ix, pp. 206 ff.: vii, p. 257.

with indices ranging from 71.2 (Cannstatt) to 74.87 (Erfurt) and 75.3 (Vohonc). The skull from Henkenfeld on the Perschling in Lower Austria had an index between 74 and 75 and belonged to a female a little over 1.60 m. high. Forrer describes the Alsatian skulls of the same group as mesaticephalic.

Sergi<sup>1</sup> claims the skulls from the cemeteries round Worms as Mediterranean. Schliz<sup>2</sup> admits resemblance to the Mediterranean form, but emphasizes differences in the general contour of the cranium, the eyebrow ridges, and the eye-sockets. He would accordingly regard the Danubians as a branch of the same stock that produced the Nordic race. Scheidt<sup>3</sup> divides the Danubian skulls, considered in his survey, between three of his nine groups, namely, the 'Nordic dolichoid transitional form' (Erfurt), the 'East German long-headed form' (Lingolsheim), and the 'East German brachoid form' (Vohonc).

As a matter of fact the remains from the late graves available probably belong to no 'pure race'. Czekanowski would admit a 'Mediterranean' element, and inclines to connect the Danubians with his short, rather dark 'pre-Slav' or  $\beta$ -race. Boelich's<sup>4</sup> proposal to see in these the relatives of Christian's 'Pre-Malays' and the original adherents of the belief in vampirism is an interesting speculation.

The Danubians were undoubtedly agriculturalists. Saddle-querns are regularly found in the settlements, and the typical shoe-last celt was above all designed to serve as the blade of a hoe. In general the implements and the character of the houses accord best with the economic stage termed 'Hackbau' or garden culture—implying cultivation by hoeing without rotation of crops or systematic manuring. However, in some Danubian settlements very large perforated shoe-last celts have turned up that almost might be ploughshares. So perhaps the Danubians in course of time invented or acquired some sort of plough.<sup>5</sup> Menghin suggests that the device could have been introduced by the stream of 'vorderasiatischer Einfluss' that is so notable in Period II.

The principal grain cultivated in Central Germany, Bohemia, and Poland was the little wheat, *Triticum monococcum*. But remains of emmer have been found in late Danubian I

<sup>1</sup> *Europa*, p. 299.

<sup>2</sup> *Loc. cit.* The Danubian skulls described by Reche probably belong to the people of the Danubian II (Jordansmühl) culture.

<sup>3</sup> *Rassen der jüngeren Steinzeit in*

*Europa*, p. 69.

<sup>4</sup> *Altschl.* i (1926), p. 163.

<sup>5</sup> Schumacher in *Germania*, ii (1918), p. 2; Menghin, *Nahrung*, p. 1039. Cf. *ZfE.* lvii, p. 273.

hut foundations in the Rhine Valley (Baden)<sup>1</sup> and in Belgium.<sup>2</sup> At Ojców in Galicia Miss Kozłowska<sup>3</sup> detected the ears of *Triticum compactum*, several varieties of *Triticum vulgare* and *Triticum spelta* (spelt), in addition to the usual *Triticum monococcum*; rye (*Secale cereale*) was also identified.

*Animals* Besides cultivating wheat the Danubians kept domestic animals, though, judging from the comparative rarity of animal bones in their hearths, they lived mainly upon a vegetarian diet. The animals identified were:

Swine,<sup>456</sup> *Sus scrofa* (?) *pal.*

Cattle *Bos brachyceros*<sup>4</sup> and a tame *Bos primigenius*.<sup>6</sup>

Sheep<sup>456</sup> *Ovis aries palustris*.

Goats<sup>456</sup> *Capra hircus*.

Horse bones have been noted in Poland and on the Rhine, but the domestication of the animal is uncertain. Bones of game are very scarce in the huts.

*Spread of Danubians* The first Danubians are revealed as an essentially agricultural population inhabiting the open löss lands. But they were not really sedentary. The number of 'settlements' is almost infinitely large, but in no site is there any evidence for really prolonged occupation; there is no accumulation of debris such as we have encountered at Vinča. Permanent settlement implies an advanced agricultural science—systematic fallowing of crops and regular manuring of the fields. The Danubians had not apparently mastered these mysteries. But without them, even on the virgin löss, fresh land must be continually brought into cultivation. And so the Danubian peasants kept moving on. Indeed there was nothing to tie them to the soil; for the land available was almost unlimited, and pit-dwellings could easily be dug. In fact it would be intolerable to live in the same half-subterranean hut for many years on end. The great expansion of the Danubians was thus inevitable. But it was a slow and gradual process. Men would hesitate before facing the rough journey across wooded ranges, necessitated in the colonization of the Elbe valley and then of the Rhineland. Allowance must, therefore, be made for a substantial retardation in dealing with Danubian I a in Bohemia, Saxo-Thuringia, and the Rhine valley. At the same time the culture would

<sup>1</sup> BRGK. xii, p. 73.

<sup>2</sup> Marcel de Puydt, *op. cit.*, p. 36.

<sup>3</sup> *Bull. internat. Acad. Sci.*, Cracovie, 1920, 1-10B, pp. 7 ff.; Kozłowski, *Młodsza*, p. 52.

<sup>4</sup> Bohemia, *PA.* xxvii, p. 195.

<sup>5</sup> Poland, Kozłowski, *loc. cit.*

<sup>6</sup> Rhineland, BRGK. xii, p. 74; *L'Anthr.* x, 1899, p. 689.

reach those regions already 'filtered' by passage through tracts of forest and upland. An instance of such impoverishment is supplied by the disappearance of clay plastic on the Rhine. Finally, the results of contact with possible epipalaeolithic tribes in Central and South Germany must be taken into account.

The Danubians spread then, as we said above, from Moravia to Belgium, Brandenburg, and Lower Silesia, retaining everywhere the essential features of their culture—pottery, stone implements, and ornaments—unchanged. But differences in the date of their occupation of the several regions are implied in the very manner of their expansion. We may recapitulate the main traits of Danubian civilization as follows.

The basis of life is primitive agriculture, involving repeated extensions of cultivated territory. Domestic animals are kept, but the diet is mainly vegetarian. Hunting plays no role in daily life. Trade is limited to some sort of barter<sup>1</sup> for objects of mystic value (*Spondylus* shells.) Summary

There is no evidence for either war or chieftainship.

A mother goddess is worshipped and depicted in the form of clay figurines, but this practice was not deeply rooted and soon lost. On the disposal of the dead evidence is conflicting. Interment in the flexed attitude and cremation are both attested, but we cannot be sure which, if either, was the original rite.

The spiral and maeander are used for free decoration of the pottery, but only in competition with skeuomorphic patterns.

Neither the potters' wheel nor the slip nor kiln-burning are known. Stone can be bored. Weaving is not attested. The original house would seem to be a pit-dwelling with an oval superstructure, but this type existed side by side with rectangular houses with gabled roofs, supported by posts.

The distinctive archaeological traits are round-bottomed pots without slip or incrustation, the shoe-last celt, the disk-shaped mace, and *Spondylus* shell ornaments.

<sup>1</sup> However, at least on the northern borders of the province, *hoards* of shoe-last celts are occasionally dug up, *Altschl.* i (1924), p. 67. Such extend

even into Holstein and Sweden, *Real.* v, p. 51. Cf. *PZ.* vi, p. 40 (Bagemühl, near Potsdam).

## II. DANUBIAN I b

*Pottery* In Moravia linear pottery is succeeded by a new style to which the name 'Stroke-ornamented ware' (Stichbandkeramik) has been given. The culture it represents may be designated Danubian I b. In texture the new fabric does not differ materially from linear ware save that a slip was now sometimes employed. The shapes on the other hand are more angular and more sophisticated (Fig. 19 a). The pear-shaped bottle disappears almost completely.<sup>1</sup> The trinity of lugs favoured in the older fabric is abandoned, and pairs become the order of the day. Sometimes the lugs are enlarged to form little loop handles, not indeed suitable for holding in the hand, but well adapted to carry stout cords of a sling.

*Decoration* Curvilinear motives disappear. The decoration is now strictly skeuomorphic, and reveals its origin in a string cradle most patently; the very lines imitate strings. Instead of continuous lines the patterns are made up of groups of intermittent lines. The whole looks like a dotted ribbon. The individual lines consist of a series of shallow oval points engraved in the soft clay with a pointed implement.

In addition to this peculiar incised decoration, cases of false painting with unfixed earth colours, applied after the firing of the vase, are recorded from Moravia,<sup>2</sup> Bohemia,<sup>3</sup> and Lower Bavaria.<sup>4</sup> In each the paint was applied over incised designs.

Finally, plastic decoration was used as in Danubian I a. In Bohemia<sup>5</sup> and on the Neckar<sup>6</sup> the lug handles have in two cases been worked up into animals' heads.

*Later phases* This simpler type of vase and decoration occurs in Moravia, Galicia, Silesia, Bohemia, Saxo-Thuringia, and on the Middle Rhine. But Danubian I b pottery shows much greater plasticity than its precursor. In Silesia the pedestalled bowl of Danubian II was taken over and decorated in the stroke-ornamented style.<sup>7</sup> The same shape recurs in the Rhenish cemeteries, but in a very much simpler form. At the same time the ornament was elaborated in a purely decorative manner to form maeanders or chequer patterns that reveal little of the skeuomorphic originals.

*Beakers* In Bohemia we find a variety of shapes—approximately

<sup>1</sup> There is one from Kovanice, *PA*, xxviii, p. 29.

<sup>2</sup> Hödnitz, Palliardi, *op. cit.*, p. 6

<sup>3</sup> *Mannus*, iii, pp. 225 f.

<sup>4</sup> Near Regensburg unpublished.

<sup>5</sup> Stocký, *BAP*. x. 2.

<sup>6</sup> Schliz, *Grossgartach*, fig. 19.

<sup>7</sup> *SV*. vii, fig. 71.



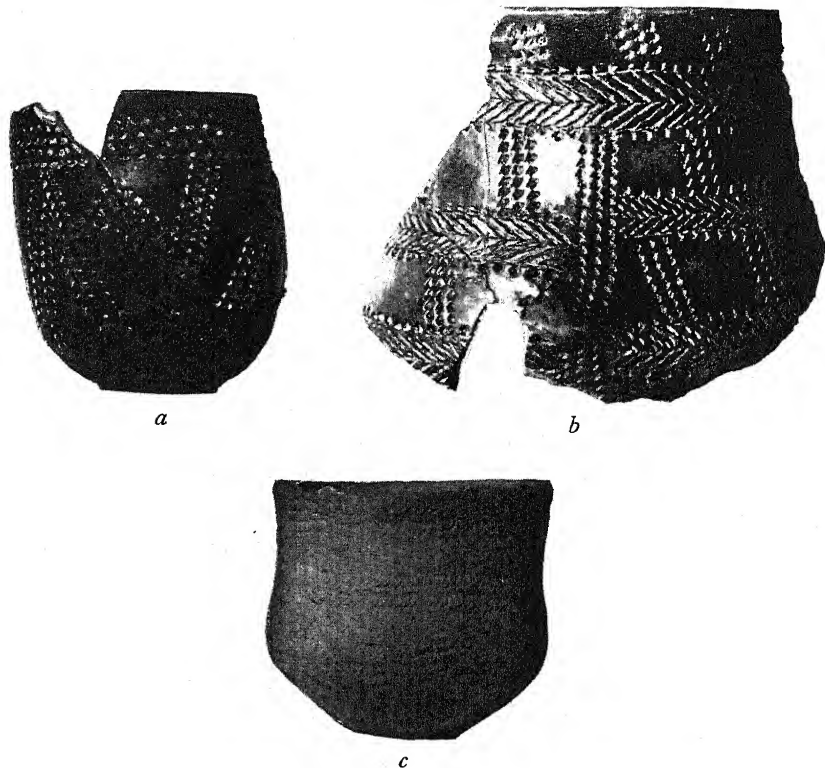


FIG. 24. Late Danubian Ib pottery. *a, b*, Černývůl,  $\frac{2}{3}$ . *c*, Kralupy,  $\frac{1}{4}$ .  
Narodni Museum, Prague

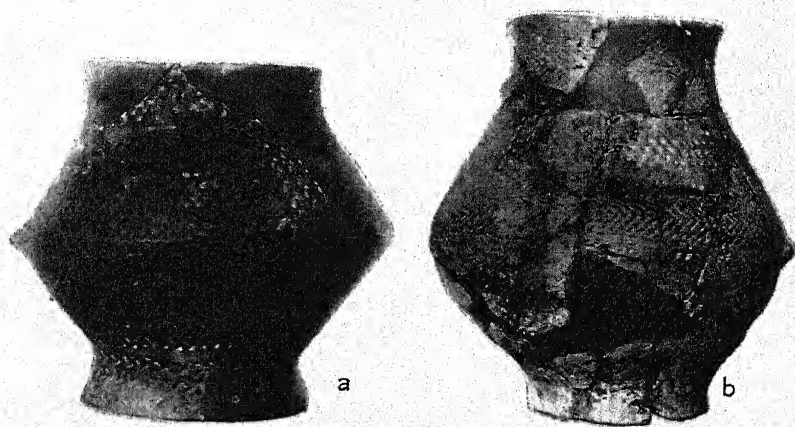


FIG. 25. Rössen vases, Praha-Troja. Narodni Museum, Prague.  $\frac{1}{4}$



square vases,<sup>1</sup> bell-shaped beakers (Fig. 24c) and huge bell-shaped pithoi with plastic rope ornament below the rim, quite in the style of Michelsberg jars.<sup>2</sup>

The decoration too in Bohemia loses its first rigidity. On the beakers horizontal ribbons, chequer patterns, and zigzags are common (Fig. 24), and the design sometimes invades the base of the vessel in the form of radial ribbons in which the skeuomorphic origin is still perceptible. Hand in hand with these modifications in pattern goes a change in technique: the strokes become ever deeper, sometimes wedge-shaped, and are frequently filled with a white incrustation. Zigzag bands of finger-nail impressions are interesting for their Sicilian analogues.

*Zoned ornament*

On the Rhine typical stroke-ornamented ware occurs at the Rheingewann cemetery near Worms and a few other sites.<sup>3</sup> But here it is associated with a different fabric termed Hinkelstein ware after another large neolithic necropolis near Worms. Among the distinctive forms of this pottery we note globular pots with slightly out-turned rims and footed beakers like large egg-cups. Instead of the intermittent line, ribbons of very fine continuous incised lines running parallel to one another are common (Fig. 31 d is a good example). Though curvilinear motives are exceptional, curious patterns which may have a naturalistic origin appear. Finally, there is a perceptible tendency towards a reserved decoration, i.e. the real ornament is a zigzag ribbon left blank between standing and hanging triangles.

*Hinkelstein ware*

No peculiar implements, weapons, or ornaments can be connected with the dotted ribbon ware as a whole, but in Bohemia and on the Rhine the shoe-last celts and chisels of phase Ib are narrower than before and exhibit an elliptical section. In addition an almost symmetrical wedge-shaped axe-hammer appears in the Rhenish cemeteries. Disk-shaped mace-heads are not associated with this culture. In the Rhineland at least Danubian Ib folk had taken to the use of the bow. At Hinkelstein the transverse arrow alone was employed.<sup>4</sup>

*Implements*

*Arrow-heads*

The Hinkelstein graves contained no *Spondylus* shells, and red ochre very seldom. Instead of *Spondylus*, fossil *Unio*, *Pectunculus* and *Cerithium* shells were used for necklaces. In Bohemia, however, *Spondylus* ornaments were still worn.<sup>5</sup>

*Shell beads*

<sup>1</sup> Stocký, *BAP.* xii, 17.

<sup>2</sup> *Ibid.* xv, 38.

<sup>3</sup> For these see Köhl, *Wörmser Fest-*

*gabe.*

<sup>4</sup> *Wörmser Festgabe*, p. 12.

<sup>5</sup> Stocký, *PZČ.*, p. 73 (Kadan).

*Graves* In burial rites some changes are associated with stroke-ornamented ware. In Bohemia<sup>1</sup> and the State of Saxony<sup>2</sup> it accompanied cremated bones, the ashes being preserved in pots, though inhumation was still regularly practised even in Bohemia. At Hinkelstein the skeletons lay on their backs with the legs extended. They belonged to a taller and more dolichocephalic folk than those interred in Danubian I a graves in the same area. The corpses were strictly orientated with the heads to the north-west.

*Distribution* Danubian I b has a more restricted distribution, particularly in the south and on the Rhine, than spiral-maeander pottery. In Moravia it is in fact comparatively rare, and Austria was scarcely touched by it. On the other hand, it is found in Bavaria in caves whither Danubian I a never penetrated.<sup>3</sup> In Silesia its distribution covers only the southern part of the province. No stroke-ornamented ware was found at Nosswitz in the north. Still a quite typical vase turned up at Klein Rietz in Pomerania, apparently accompanied by *Spondylus* shells.<sup>4</sup> And one isolated pot found its way as far as West Prussia.<sup>5</sup>

*Chronology* Chronologically no sharp division can be drawn between Danubian I a and I b. In Moravia<sup>6</sup> the latter fabric is found together with the later styles of spiral-maeander ware in some hut-foundations. In others it is associated with Danubian wares of Period II. Its intermediate position is thus assured.

In Silesia in the great settlement at Jordansmühl Danubian I b was associated with Danubian II ware in five huts. Danubian I a and Danubian II occurred together in seven other huts.<sup>7</sup>

A mixture of the two styles is very common in Bohemia, Thuringia, and Bavaria. In the first-named country a partial synchronism between the two is placed beyond doubt by the fact that vases showing each class of incised decoration were painted over in precisely the same manner with spiral patterns. Still, cases have been observed in which hut-foundations containing spiral-maeander ware have been disturbed by later dwellings fitted with stroke-ornamented ware.<sup>8</sup> Conversely, the later fabric is sometimes associated with Danubian II painted wares.<sup>9</sup> But in Saxo-Thuringia Danubian I b is said to be the older fabric.

<sup>1</sup> Schráníl, *Böhmen*, p. 46.

<sup>2</sup> *Mannus*, xviii, p. 86.

<sup>3</sup> *Mannus*, xv, p. 211; *BUF*, iv, p. 11.

<sup>4</sup> *Mannus* i, p. 234.

<sup>5</sup> *Lemke-Festschrift*, fig. 28.

<sup>6</sup> Palliardi, *WPZ*. i, l. c., p. 7.

<sup>7</sup> *SV*. vii, p. 2.

<sup>8</sup> Stocký, *Chron.*, p. 15.

<sup>9</sup> Stocký, *PZČ*, p. 76 (Černý Vůl).

In Bavaria, too, a priority of spiral-maeander over 'Hinkelstein' ware has been stratigraphically demonstrated at three or more sites.<sup>1</sup>

On the Middle Rhine near Worms Dr. Koehl<sup>2</sup> inferred from the intersection of pit-dwellings that the Hinkelstein ware was older than the spiral-maeander—a complete inversion of the Moravian relationship. At other South German sites<sup>3</sup> the sequence of cultures was rather different.

In economics Danubian Ib agrees with Danubian Ia save, perhaps, for a greater prominence of hunting. In religion, figurines and, in art, the spiral motives have been abandoned. In technique the only advance is the pottery slip. The bow replaces the mace as a weapon, and for ornaments *Spondylus* tends to give place to shells of local species.

According to Schliz,<sup>4</sup> stroke-ornamented ware preserves a skeuomorphic decoration which had been common to all Danubian I fabrics, but in linear ware was abandoned for a more purely ornamental system. At Hinkelstein we should see the second branch in a relatively young phase of its evolution. The assumed primacy of the skeuomorphic or zigzag system is accepted also by Matz,<sup>5</sup> and thus Schliz's account is perhaps not far from the truth. The *pointillé* element in the late linear ware of Moravia and Bohemia, as well as in that of Vinča I, would yield the patterns characteristic of stroke-ornamented ware by the mere elimination of the continuous linear borders. The peculiar feature of stroke-ornamented ware is that it developed original and purely ceramic forms. The late spiral-maeander pottery, on the other hand, that co-existed with it and often mixed with it, preserved its original repertoire of primitive shapes without a sign of improvement. The use of the bow, if universal, is another significant distinction.

Thus the makers of the Ib ware were distinguished by creativeness or at least receptivity. Perhaps such greater adaptability and originality may be explained by the absorption in the original Danubian stock of some new ethnic element. This might well be derived from epipalaeolithic survivors occupying the highland regions which the peasants had to cross. These survivors did possess the bow and did use arrows armed with transverse heads. And contact between the Danubians of the

*Summary*

*Relation  
to  
Danubian  
Ia*

<sup>1</sup> Reinerth, *Chron.*, p. 59.

<sup>2</sup> *Mannus*, iv, pp. 60 ff.

<sup>3</sup> Cf. e.g. *PZ.* iii, p. 32; *Real.* vii, pp.

237 f.

<sup>4</sup> *PZ.* ii, p. 143.

<sup>5</sup> *Frühkret. Siegel*, p. 233.

plain and the Tardenoisian hunters of the hills has actually been demonstrated in Franconia.<sup>1</sup> At the same time the hoards have shown that the Danubians were in touch with the peoples of the Nordic province. Still the complex typified by stroke-ornamented ware remains essentially Danubian in character.

### III. THE RÖSSEN CULTURE

We have seen that in Danubian Ib ware the incisions were steadily becoming more emphatic, and white incrustation was used. Through a further accentuation of those tendencies arose the pottery termed Rössen ware that characterizes a rather specialized culture. The name is an unhappy one; for the cemetery at Rössen near Merseburg was excavated many years ago, and it is now known<sup>2</sup> that almost all the manifold neolithic groups of Central Germany occupied the site in turn. The culture first recognized at Rössen has, however, now been found at many other sites, where its attributes are more easily disentangled from chance adhesions.

*Pottery* The Rössen pottery in technique conforms to Danubian I tradition, though a slip is more regularly employed and the

*Forms* surface is sometimes burnished. The most distinctive form is a deep hemispherical bowl of Danubian pattern, the wall of which has been extended upwards to form a neck while the rim has been carefully splayed out. In the most characteristic examples, as they occur in Saxo-Thuringia and Bohemia, a low ring-foot is added for the vessel to stand on (Fig. 25). In South-west Germany this element is rare. Deep dishes, in Central Germany standing on a ring-foot, are equally characteristic. Handles were not used, but the bowls have the usual lugs, generally on the shoulder.

*Orna-  
mentation* The technique,<sup>3</sup> used for the decoration, may be termed 'furrowing': when a line was wanted, it was made by a progressive series of jabs with a sharp implement held slanting, so that a continuous furrow with an uneven bottom resulted. At other times the stylus, or more often two bound together, was jabbed into the damp clay so as to produce a series of discrete impressions. In both cases the incisions were filled with white matter.<sup>4</sup> Indeed the very object of the peculiar methods of incising was to make the inlay hold.

*Patterns* Horizontal and zigzag bands still run round the vessel, but

<sup>1</sup> Gumpert, *l.c.*, p. 113.

<sup>2</sup> Niklassen, *Mannus*, xi-xii, 'Neuere Ausgrabung' usw.

<sup>3</sup> Götze, *ZfE.* xxxii, p. (247).

<sup>4</sup> Probably chalk; cf. analyses given in *PZ.* v, p. 395, of the paste from Eberstadt vases.



the surface is often broken up vertically—a practice foreshadowed by the vertical fillets hanging from the neck in quite early Danubian Ib vases. Moreover, incisions often cover so much of the surface that the real pattern is the reserved space as on some Hinkelstein vases. Schuchhardt<sup>1</sup> is doubtless right in regarding the decoration of the Rössen vases as imitated from basketry; plaited work has replaced the cords or simple straws of the cradle we have pursued so long.

The stone implements found in graves and settlements of the Rössen type in South Germany are all purely Danubian, with the addition of triangular flint arrow-heads. Even from Rössen come various shoe-last celts, some very long and perforated, and disk-shaped mace-heads. On the other hand, the Museum für Völkerkunde in Berlin possesses triangular and transverse arrow-heads from the same site, though it is not clear whether they come from 'Rössen' graves.

Bracelets<sup>2</sup> and buttons of marble were undoubtedly worn by the corpses buried at Rössen and in some graves in North Bohemia.<sup>3</sup> Bracelets of stags' antler and *Spondylus* shell, necklaces of stags' teeth and imitations of the same in marble, buttons carved out of boars' tusks,<sup>4</sup> and a copper ring from Rössen probably belong to the same context. The marble may have come from the Fichtelgebirge; Götze thought it more probably Aegean,<sup>5</sup> but the Bihar mountains are really a more likely source.

Rössen pottery is often dug up in pit-dwellings of the familiar oval type. On the Goldberg<sup>6</sup> in Wurtemberg the houses were partly excavated in the earth. The pits, rectangular in plan, measured from 4.2 × 3.2 m<sup>2</sup>. to 5.2 × 4.9 m<sup>2</sup>., but post-holes outside them suggested a sort of apsidal superstructure. Some huts are said to have been provided with regular covered cellars. At Grossgartach near Heilbronn Schliz found Rössen ware in rectangular, half-subterranean huts with rooms at different levels and a central hearth in the lowest room.

The Goldberg<sup>7</sup> was a fortified settlement, and some authorities hold that the fortifications there and at Monsheim near Worms were built by the Rössen folk.

The regular method of burial at the eponymous site and in

<sup>1</sup> PZ. i (1909), p. 47.

<sup>2</sup> VAT., pl. vi, 82.

<sup>3</sup> At Zatec and Prosmiky near Saaz (Real. ii, p. 63) and Praha-Troja (Stocký, PZČ., p. 73).

<sup>4</sup> ZfE. xxx, p. (606).

<sup>5</sup> ZfE. xxxii, p. (239).

<sup>6</sup> Real. v, p. 172.

<sup>7</sup> RGK-BI. li (1903), p. 99; lii, p. 348; lvi, p. 45; lix, p. 401. Schumacher, Rheinlande, i, p. 45.

Bohemia was interment in the contracted position in trench-graves. There were also cremation graves at Rössen, but some at least of these were furnished with the Jordansmühl variety of Danubian II pottery.<sup>1</sup>

*Craniology* According to Schliz<sup>2</sup> the Rössen skulls are quite distinct from the other Danubian, and approximate closely to those from the Nordic megalithic graves; they show a wedge-shaped profile in *norma verticalis*. As a matter of fact, however, at least three distinct types are represented at Rössen, none of which are typical 'Nordics' such as appear in Westphalia or Mecklenburg.<sup>3</sup> They agree quite as well with other true Danubian skulls.

*Economy* In the Rhineland, Schumacher says, the bones of game predominated over those of domestic animals in the Rössen settlements. At Rössen itself the ornaments of stags' teeth and boars' tusks reveal a population more given to hunting than were the older Danubians. But all Danubian I a domestic animals are also attested for Rössen.

*Distribution* Rössen pottery is restricted to Saxo-Thuringia, northern Bohemia west of the Elbe, Bavaria, and the Upper and Middle Rhine. East of the Elbe and south of the Berounka it is not found at all.

*Summary* To sum up: for the Rössen folk hunting is on a par with stock-rearing and agriculture. Trade remains rudimentary.

Specialization of weapons for war is questionable.

There is no evidence for religious beliefs, but the dead were accorded ritual burial in the contracted attitude.

The artistic aim is an opposition between light and shade based upon basketry patterns.

Industry has advanced on Danubian I a through the adoption of the slip for pottery. The house types are, as before, pit-dwellings or rectangular structures supported by posts.

Distinctive archaeological features are vessels with rudimentary necks and ring-feet ornamented in jabbed and furrowed technique, shoe-last celts, disk mace-heads, arrow-heads, marble bracelets and beads made from trophies of the chase—deers' teeth, boars' tusks, &c.

*Origin* The relation of the Rössen culture to the two described  
*North* above has long been the subject of controversy. Usually only  
*Sea* the ceramic evidence has been taken into account. Most  
*megalithic* authorities<sup>4</sup> seek the origin of the characteristic footed vase  
*culture*

<sup>1</sup> Mannus, xi-xii, l. c.

<sup>2</sup> AfA. ix, pp. 202 and 219

<sup>3</sup> Scheidt, *Rassen*, p. 46.

<sup>4</sup> Götze, *ZfE*. xxxiii, p. (416); Schuch-

and the furrowed and jabbed decoration in the pottery from North Sea megaliths. Schliz<sup>1</sup> would recognize in addition influence from corded ware. To Reinerth the rectangular houses are also Nordic. The transverse arrow-heads from Rössen, if really belonging to our culture, would afford a further link with that area, though equally capable of derivation from local epipalaeolithic stocks.<sup>2</sup> At the same time every one admits a substantial Danubian element. The Rössen culture would be a hybrid with the Nordic element dominant.

Nevertheless, as long ago as 1900 P. Reinecke<sup>3</sup> proposed to invert the relation between Rössen and the North Sea cultures and to derive from Central Germany the forms found in the megalithic graves to the north-west. Subsequently Stocký<sup>4</sup> has shown that Rössen pottery may be regarded as a late variant of Danubian I b. The rise of the deep jabbed and furrowed ornament, distinctive of Rössen, can be traced step by step in stroke-ornamented ware; the ring-foot had already been taken over by that fabric from Danubian II models, and appears in the Central German Rössen form already degenerate.

Attempts at polychromy had already been made under Danubian II influence on spiral-maeander and stroke-ornamented vases. The whole point of the Rössen system of incision was to enable white paste to be firmly incrustated so as to produce a contrast of light and dark surfaces. For the rest, Reinerth<sup>5</sup> admits that the Rössen culture of the Rhineland and Bavaria is thoroughly Danubian. Stags' teeth were strung together for necklaces at the Danubian II site of Lengyel. Marble, too, occurs quite frequently in Danubian II deposits in Moravia and Hungary. Stone bracelets occur already in Vinča I, and, judging from discoveries in Thessaly, Egypt, and Spain, such bracelets belong to the same complex as the shell bracelets worn by Danubian I a folk. They are foreign to the northern complex.<sup>6</sup>

Finally, socketed ladles, occurring sporadically in the megalithic tombs of Holland, Hanover, and Denmark, as well as shoe-last celts and plough-shares exported into the Nordic province,<sup>7</sup> are conclusive proof that an influence emanating

hardt, *PZ.* i, pp. 46 f.; Bremer, *PZ.* v, pp. 424 f., *Real.* viii, p. 238; Åberg, *Nordic*, pp. 151 f.

<sup>1</sup> Schliz, *ZfE.* xxxviii (1906), p. 328.

<sup>2</sup> p. 51, above.

<sup>3</sup> *ZfE.* xxxii, p. (602).

<sup>4</sup> *Obzor*, 1922; *Chron.*, pp. 10 f., but

note Červinka's criticisms in *Real.* ii, p. 63.

<sup>5</sup> *Chron.*, p. 24.

<sup>6</sup> The bracelet from the Uckermark, Schumann, p. 28, is quite isolated and of doubtful age.

<sup>7</sup> Cf. pp. 47 above and 114 below.

from the south-east was really affecting the 'megalithic' culture of the north; for, as we shall see, such ladles are at home only in the Danube basin.

Hence we prefer to reckon the Rössen culture to the Danubian family. Nevertheless, the divergences of the former from the main tradition are substantial when appraised from a cultural standpoint. However completely the arts and crafts of the Rössen folk may agree with those of the Danubians, the passion for the chase is a trait which could never have arisen amongst the essentially agricultural peasants. We need not deny a 'Nordic' element in the Rössen folk. Only this element was by no means necessarily derived from the North Sea coasts. It may just as well have been supplied by the epipalaeolithic aborigines of the Thuringian-Bavarian highlands; for the distribution of that group of epipalaeolithic remains coincides approximately with that of Rössen pottery. The use of basketry on the Elbe in an epipalaeolithic context may also be significant.

#### IV. THE RHENISH STYLES

*Eberstadt*  
*type* In the Rhineland a multiplicity of local styles arose through the interaction of the Spiral-maeander, Hinkelstein, and Rössen groups. The 'Eberstadt style' (Figs. 26-7), so-called after a site in the Wetterau excavated by Bremer,<sup>1</sup> employs the Rössen technique, but the patterns are less close. Jars with ring-bases appear, as at Rössen, but there are round-bottomed pots and cylindrical beakers, square dishes, and curious sack-like vessels.<sup>2</sup> For the first time we meet the perforated vases that become so common in the Bronze Age. The implements are purely Danubian even to the disk-shaped mace-heads. The makers of this ware practised cremation; their graves on the Wetterau were precisely like those of the spiral-maeander people in the same locality, described on p. 44, save that the necklaces were made from round pebbles instead of flat shale plaques. At Rheingönheim in the Rhenish Palatinate cremation and inhumation graves containing analogous pottery occurred side by side (Fig. 26).

The relative age of this style is given by a socketed ladle of Danubian II type from the settlement of Insheim, in the same province.<sup>3</sup> A valuable link is thereby established with the isolated ladles from the North Sea megalithic tombs mentioned above.

<sup>1</sup> PZ. v, pp. 429 ff.

<sup>2</sup> Cf. Kossinna, *Mannus, Ergänzungs-*

*band.* iv, p. 53.

<sup>3</sup> BRGK. vii, p. 178.

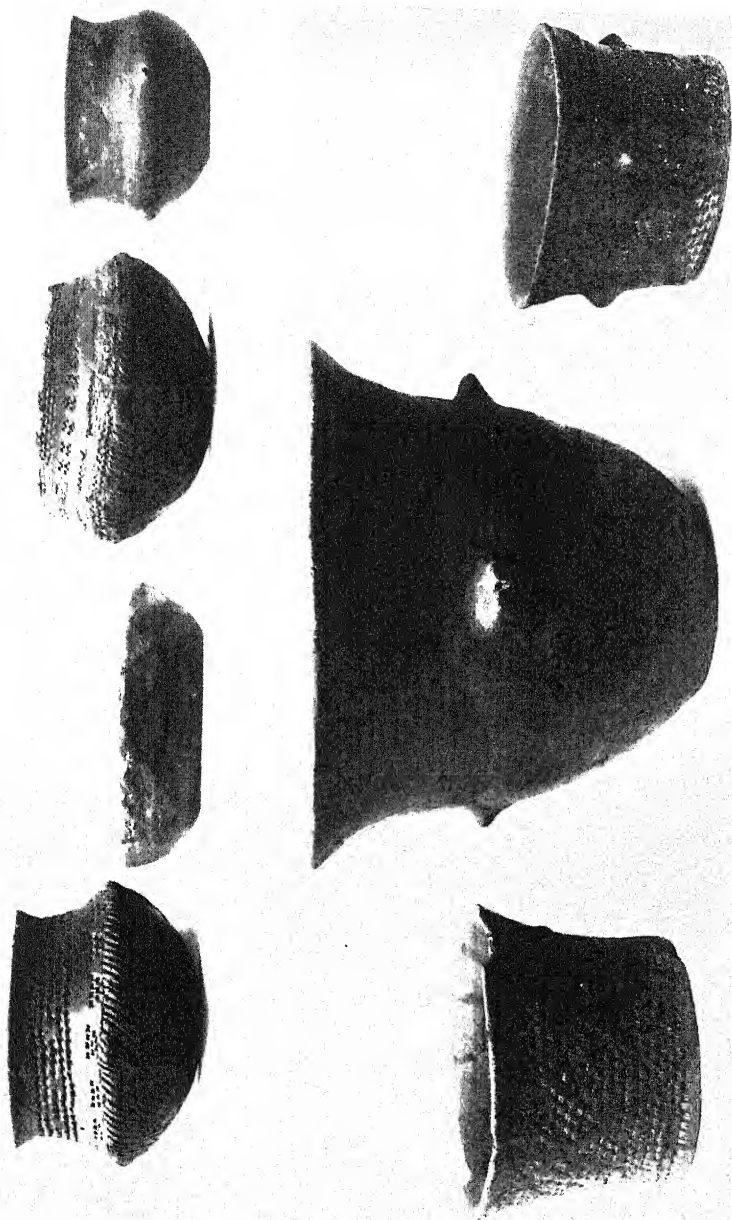


FIG. 26. Eberstadt vases, Rheingönheim. Upper row from inhumation, and lower row from cremation graves. M. Speyer



FIG. 27. Eberstadt Vases, Insheim. M. Speyer.  $\frac{1}{2}$

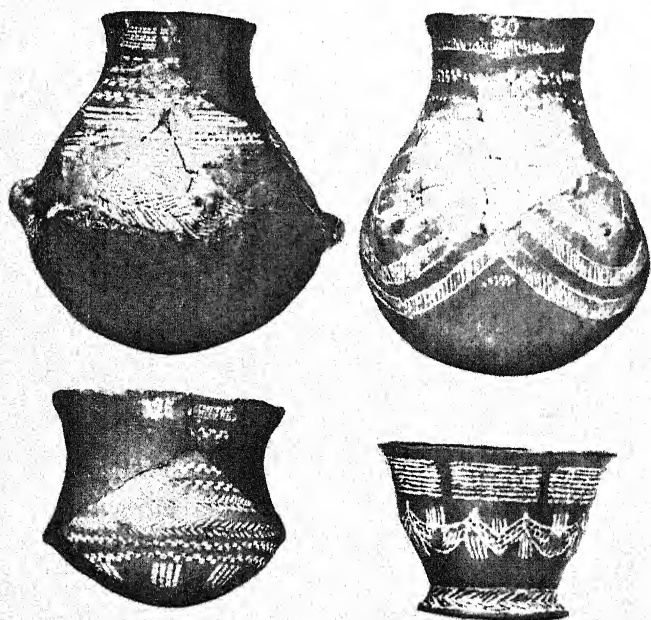


FIG. 28. Grossgartach vases, Grossgartach, after Schliz.  $\frac{1}{3}$



Another interesting local group is that called after the village of Grossgartach near Heilbronn. The round-bottomed vases—slightly carinated bowls and pear-shaped flasks—bear a delicate incised and incrustated decoration, reminiscent of fine netting, covering the neck and part of the base of the vessels (Fig. 28).<sup>1</sup>

*Grossgartach type*

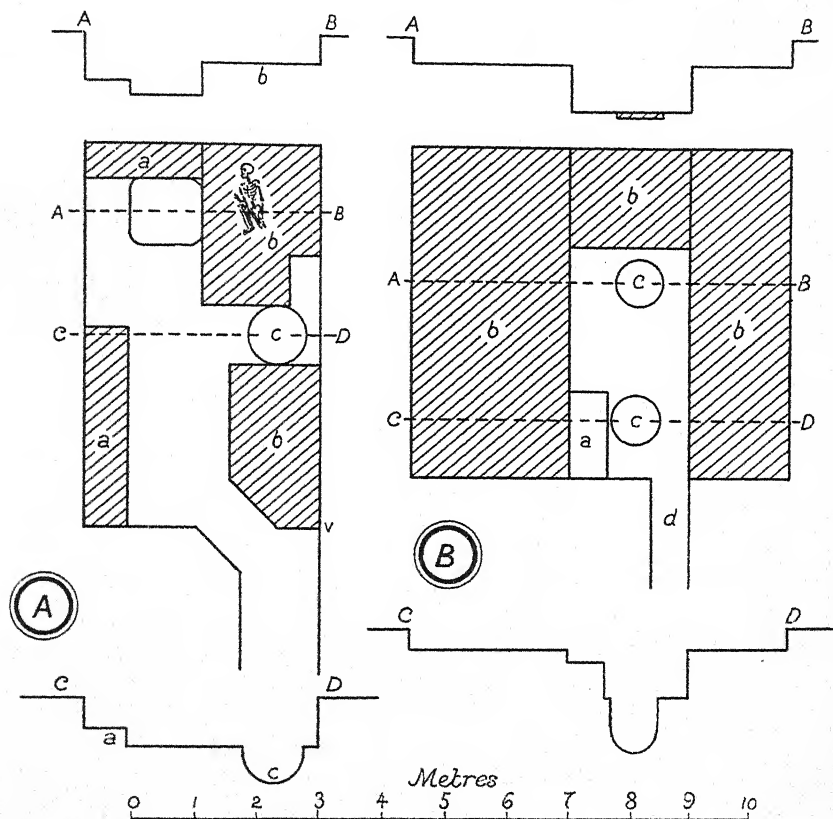


FIG. 29. A. Spiral-Maeander and B. Grossgartach huts, Grossgartach, after Schliz

The patterns are often suggestive of boats or even distorted natural objects, but probably the whole decoration is inspired by textile nettings.

The Grossgartach huts<sup>2</sup> were shallow rectangular excavations with a porch in front and two 'rooms' at different levels.

In the Rhine valley the simple spiral-maeander ware lived on side by side with the so-called mixed cultures and survived

*Houses*

*Spiral-maeander ware*

<sup>1</sup> Schliz in *Heilbronn-Festschrift*, p. 22 and pl. ix.

<sup>2</sup> Schliz, *Grossgartach*, fig. 4.

them. Near Worms Koehl<sup>1</sup> found that the several wares succeeded each other in the following order: Hinkelstein, Rössen, Grossgartach, Spiral-maeander. Schliz's sequence near Heilbronn was Grossgartach followed by Rössen and Spiral-maeander side by side. In Western Thuringia Spiral-maeander preceded Grossgartach pottery. At Hönheim in Alsace Hinkelstein ware overlaid Spiral-maeander.<sup>2</sup>

*Relation to other groups* Most authorities hold that an influx of new colonists, perhaps from Thuringia, bringing Spiral-maeander ware, destroyed the earlier cultures of the Hinkelstein and Rössen families and their derivatives. Still it is not yet clear that the earliest Spiral-maeander ware of the Rhineland, as represented for instance at Flamborn, is not quite as old as the cultures it should have displaced.

Be that as it may, the makers of Spiral-maeander ware did at one time or another occupy the whole Rhineland. They preserved the main outlines of their culture, as they had been established in Moravia, with extraordinary fidelity; but nevertheless absorbed some elements, such as the use of the bow,<sup>3</sup> from the mixed cultures. Moreover, the pottery undergoes some modification or rather degeneration, perhaps under Hinkelstein influence. While at Flamborn the features characterizing the middle phase of Danubian I a are still preserved, much of the Rhenish pottery is decorated in the peculiar style, best illustrated at Plaidt on the Nette. It is this decadent ware that is found in the cremation graves round Hanau. The same late ware reached the province of Liège in Belgium with the culture termed locally 'Omalian' (Fig. 31).<sup>4</sup> In reality Omalian is nothing more or less than Danubian I a in a late stage of evolution. Yet the Danubians, who arrived only in a late stage of their career, found the natives of Belgium still in an epipalaeolithic phase of culture; Spiennian (i.e. Campignyan) remains have actually been found overlying Omalian hearths!<sup>5</sup> It was thus that the Neolithic civilization reached this corner of Western Europe at least. Still farther west the *Spondylos* bracelets found at Frignicourt on the Marne and some sherds from Villejuif near Paris have a very Danubian look. Dr. Stocký has in fact identified some sherds sent him from the Paris basin as

<sup>1</sup> *Mannus*, iv, pp. 60 f., but cf. Rein-  
erth, *Chron.*, p. 59.

<sup>2</sup> *PZ.* vi, p. 30.

<sup>3</sup> Arrow-heads are indeed quite exceptional, but two transverse and two triangular specimens were found at Flamborn; *Wörmser Festgabe*, p. 26.

<sup>4</sup> For a good summary see Marcel de  
Puydt, *Annales de la Fédération arch.  
de Belgique, Congrès de Liège, 1909*.  
Note that transverse arrow-heads and  
flint sickle-teeth were found here.

<sup>5</sup> *BSA. Brux.* xxxix, p. 63, n. 2.

Danubian.<sup>1</sup> So perhaps some day, when French archaeologists turn to their pots, we shall be able to trace our Danubians still farther west. And they certainly reach southern Holland.<sup>2</sup>

In the foregoing sections we have assumed that the Danubian I culture spread northward and westward. We are now in a position to justify our assumption.

*Direction  
of move-  
ment*

In Moravia, Bohemia, and Bavaria the earliest spiral-maeander or linear ware was succeeded by a fabric, here christened Stroke-ornamented ware, that coexisted with later phases of Spiral-maeander pottery. But on the Rhine the succession of wares was apparently reversed. Hence the first colonization of the Rhineland cannot be earlier than the second phase of culture represented in Moravia. Furthermore, in Moravia Danubian I culture was replaced or absorbed by another quite distinct civilization which we call Danubian II and whose advent we take to mark a new period—'Period II'. The influence of Danubian II culture is seen in the later Stroke-ornamented fabrics of Silesia and Bohemia and in the Rössen ware of Thuringia. In Silesia, Bohemia, and Bavaria the late Danubian I wares are not seldom associated with offshoots of Danubian II (Jordansmühl and Münchshöfen wares). That means that in these regions Danubian I culture persisted into Period II. But Danubian II influence is already perceptible in the Hinkelstein pottery that should mark the earliest Neolithic settlement on the Rhineland.

*Division  
into  
periods*

Hence the Danubian colonization of the Rhine basin falls in the main into Period II—an epoch when Danubian I culture, as such, had already vanished from Moravia. The correctness of this late dating is conclusively proved by the socketed ladle from Insheim, very likely imported from the Danubian II people of Bavaria. Wahle and Reinerth think that the delay in the colonization of the Rhine basin was due to the density of the forest on the surrounding watersheds that would oppose an impassable barrier to immigrants till the effects of the dry Subboreal phase made themselves felt. The relative age of the settlements in the several areas, therefore, excludes the possibility of reversing the Danubian movement. The Rhineland was colonized from the Danube basin, not vice versa. Stylistic consideration shows that the occupation of Belgium was a yet later stage in the same advance.

*Danubian  
I reaches  
Rhine in  
Period II*

<sup>1</sup> *PA.* xxxiv (1925), p. 572, n. 1.

<sup>2</sup> van Giffen, in *Rev. Anthr.* 1928, Nos. 7-9.

## V. THE BÜKK CULTURE

Before discussing the origin of the first Neolithic culture in Central Europe, we must glance at an ill-explored region to the east.

The easternmost settlements with linear ware, yet identified, lie near Sommerein<sup>1</sup> between the Leitha and the Danube, and at Agota near Zseliz<sup>2</sup> on the lower Hron (Gran or Garom). In each nothing earlier than the 'music note' style has been identified up to date.

But from this point eastward along the löss slopes of Southern Slovakia and North Hungary extends a little-known civilization that exhibits close affinities with that described as Danubian I a. It has been christened the Bükk culture because it was first identified in caves of the Bükk mountains near Miskolc.<sup>3</sup>

*Sites* The most important sites that have yielded remains of this culture are the cave of Aggtelek, and open settlements, probably in all cases hut-foundations, at Sátoraljaújhely,<sup>4</sup> Bodrogkeresztur, Rakamaz-Timar, and Gáva, all in the plain of the Upper Tisza. But its traces are found far up tributaries, the Hernad, &c., among the mountains of Eastern Slovakia,<sup>5</sup> and indeed right into the Tatra.

*Pottery* The typical Bükk ware is exceeding fine, thin-walled, black in colour, and usually well burnished. The most distinctive shape is a deep hemispherical bowl, very like the Danubian I a bowl in outline, but flattened or indented on the base (Fig. 32). Shallow dishes of the same general plan are also known. The only handles were pierced lugs, generally four in number; but some vessels were provided with short spouts, just below the rim, leading to a sort of strainer. Large pithoi are not rare.

*Ornamentation* The designs are very finely incised and often filled with white, more rarely with red, incrustation.<sup>6</sup> The principal figures are very complicated maeanders, key patterns, or distorted volutes (Fig. 30) formed by single lines or ribbons of parallel lines. But the vase surface is often broken up into vertical panels, and a multitude of tiny figures are used to fill up the gaps. Remarkable are the arcaded arches, radiating from the base, the effect of which Hoernes<sup>7</sup> has compared to the lotos cups of Kamares

<sup>1</sup> WPZ. x (1923), p. 66.

<sup>2</sup> WPZ. xi, p. 111.

<sup>3</sup> Cf. *Barlangkutatás*, 1916, pp. 7 ff.; *Történelmi és Régészeti Közlemények*, Miskolc, 1927, pp. 27 ff.

<sup>4</sup> *AE*. xxvii, p. 285.

<sup>5</sup> Eisner in *IIA*. ii, p. 341.

<sup>6</sup> Wosinski, *Ink. Ker*, p. 173 and pls. CXLVII-IX. The material was *Bolus*.

<sup>7</sup> *Urgeschichte*, p. 259

ware. But really the 'arcades' may be only distorted volutes as on the bowl figured here. Exceptionally a highly conventionalized representation of the Mother-Goddess with upraised arms<sup>1</sup> is introduced into this purely geometric framework.

Franz assigns to the Bükk culture two other fabrics. Both are found at Bodrogkeresztur, presumably with the standard Bükk vases, though in the two metres of deposit at that site there was room for admixture of foreign elements.<sup>2</sup> The first is represented by a hemispherical bowl from Bodrogkeresztur, a bottle of Danubian II shape from Tisza Dob (Fig. 55), and

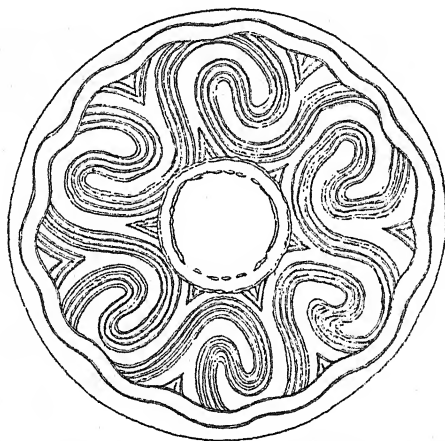


FIG. 30. Bükk Vase, Aggtelek after Franz.  $\frac{1}{2}$

a bowl from Marosvásárhely.<sup>3</sup> The designs are arranged in panels in which key patterns, chequers, and other figures are left reserved against fine cross-hatchings not quite in the technique of true Bükk ware. This fabric we still term 'negative Bükk ware'.

The other fabric is illustrated by a bottle (apparently of Danubian II type) from Bodrogkeresztur and the pedestalled bowl from Tiszadada reproduced in Fig. 33. The designs are wavy ribbons bordered by rather coarse lines quite different from the sharp engraving on true Bükk ware. The fine polish is also lacking. Some sherds of this ware are painted in North Hungarian style. Both fabrics may well represent a rather later variant of true Bükk pottery.

<sup>1</sup> *Történelmi és Rég. Közl. l.c.*, pl. v-vi.

<sup>2</sup> The best account of the site is given by L. Bella in *Az országos m. régészeti*

*Társulat, Évkönyve*, i, p. 7 (summary on p. 214).

<sup>3</sup> *Dolgozatok*, vi (1915), p. 234, fig. 16c.

- Implements** The great caves in the Bükk mountains were inhabited at various dates, so that there are doubts what implements belong to the Bükk culture. A sort of shoe-last celt was found at Aggtelek, and Dr. Eisner has discovered others in the Slovakian caves, but the implement is not very common in the area of the Bükk culture. An adze from Rakamaz Timar stands midway between a shoe-last celt and a bevelled celt of Thesalian form. Obsidian was used for blades. Bone was fashioned into fish hooks<sup>1</sup> and simpler implements, and was sometimes engraved, quite in the manner of the pottery.
- Obsidian Fish-hooks**
- Skeletons** There were many skeletons, belonging to long-headed and short-headed individuals,<sup>2</sup> at Aggtelek, but their date is uncertain. Remains of animals and grains were found in the same cavern. The users of the cave cultivated *Triticum monococcum*, two varieties of *Triticum vulgare*, millet, beans, lentils, and peas.<sup>3</sup> Their domestic animals were:
- Grains**
- |                |                               |  |
|----------------|-------------------------------|--|
| <b>Animals</b> | <i>Canis familiaris</i>       | <i>Bos frontosus</i>                       |
|                | <i>Capra domestica</i>        | <i>Bos brachyceros</i>                     |
|                | <i>Ovis aries</i>             | <i>Sus scrofa</i> (dom.)                   |
|                | <i>Bos primigenius</i> (dom.) | <i>Sus scrofa palustris</i> . <sup>3</sup> |

All the löss settlements containing Bükk ware also yielded painted pottery of the North Hungarian type, and a synchronism between the two wares is demonstrated by the correspondence of their ornaments (see p. 106 below).

**Date** The similarity in form between the Bükk bowls and those of Danubian I would in itself incline us to assign the culture to Period I. Moreover, the Bükk huts at Bodrogkeresztur had been disturbed by graves dug late in Period II. On the other hand, Franz has observed crusting in Danubian II style on Bükk sherds. Nevertheless, we regard the Bükk culture as rooted in Period I. Its significance is that it attests the occupation of the löss region of North Hungary by people akin to the Danubian I folk of Moravia. It was precisely in this area, as noted above, that influences from the south along the Danube should first become manifest after traversing the alluvial stretch in Hungary.

**Star pottery** Allied to the later Bükk wares is what Professor Kozłowski<sup>4</sup> describes as Star pottery. It gets its name from the star-shaped

<sup>1</sup> At Kenezlő-Fazekas on the Tisza.

<sup>2</sup> Nyary, J., *Les hommes de l'âge de la pierre dans la caverne d'Aggtelek*, Buda-Pest, 1877.

<sup>3</sup> Nyary, J., *Les hommes de l'âge de la*

*pierre dans la caverne d'Aggtelek*, Buda-Pest, 1877; *ib. Az Aggteleki barlang*, Buda-Pest, 1881, p. 66.

<sup>4</sup> Młodsza, p. 58 and pl. XIII.



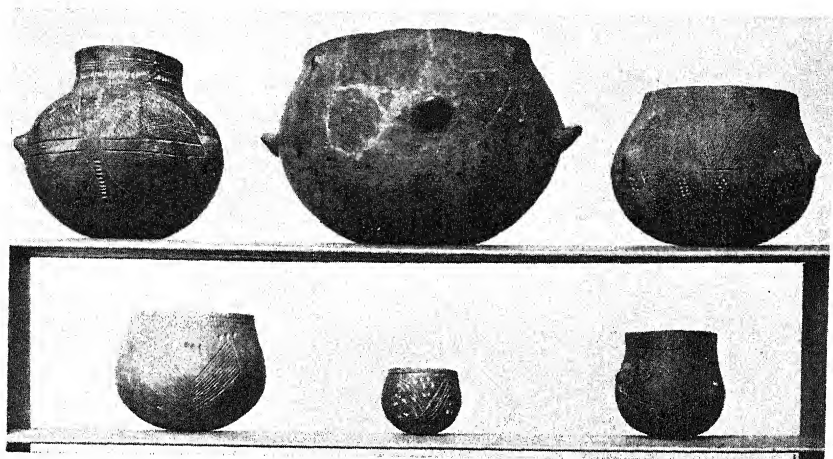


FIG. 31. Omalian pottery, Musées de Cinquenaire, Brussels



FIG. 32. Bükk vase, Bodrogkeresztur. A. M. N. Muzeum.  $\frac{1}{5}$

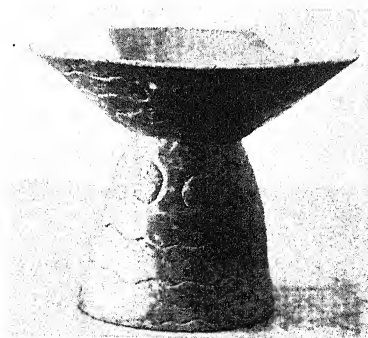
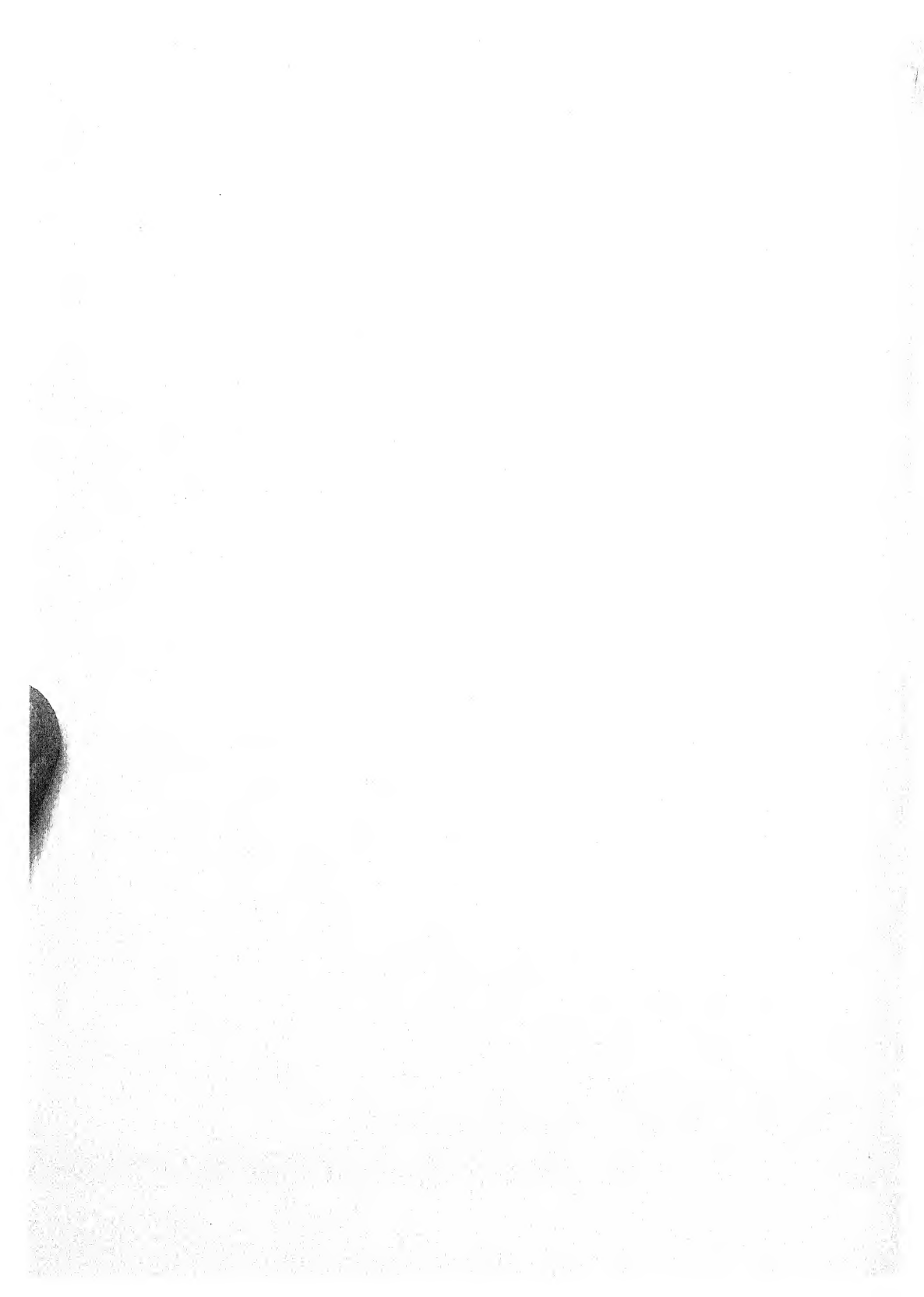


FIG. 33. Pedestalled bowl from Tiszadada, Nyiregyháza.  $\frac{1}{5}$



pattern reserved on the bottom of the bowls against a field hatched with rather sparse linear incisions. Besides open bowls, Kozłowski assigns to this group high-handled vases which look distinctly like a third period form. Still the typical star-pattern bowls are found on the löss areas of Galicia accompanied by Danubian types of celt and even by Spiral-maeander and Stroke-ornamented pottery.<sup>1</sup> The Polish fabric must therefore be regarded as a Danubian survival in this remote corner.

## VI. CONCLUSION

The neolithic civilization was diffused from Moravia to Belgium, along the great natural routes described in Chapter I, by a race of Danubian peasants. These were forced to occupy successively all the available löss lands through their own extravagant methods of cultivation and the natural increase of the population. Their migrations were, however, perhaps accelerated by the intrusion into the eastern part of the province of fresh immigrants bringing with them a new civilization termed Danubian II.

*Gradual  
nature of  
Danubian  
expansion*

The whole expansion was a slow process occupying two periods of undetermined length. In its course secondary groups arose through contact between the Danubians and aboriginal tribes and under impulses from the new intruders on the east.

On the other hand, in the course of the slow migration across various natural obstacles some elements of the original Danubian civilization were lost; it is poorer at the end of its wanderings in Belgium than at the beginning in Moravia and Silesia. Still, from the March to the Meuse a remarkable uniformity reigns.

But where did the Danubians originate, and whence did they derive their domestic animals, their cultivated plants, and the arts of polishing stone and fashioning pots?

Nearly all authors admit, what we have proved, that the starting-point of the movement lay in the Danube basin. To Schliz, Danubian civilization was autochthonous in the Central European löss lands, including Silesia, Bohemia, and Saxo-Thuringia. Menghin<sup>2</sup> adopts a similar position, defining the original focus as Bohemia, Moravia, and West Poland.

*Origin of  
Danu-  
bians:  
East  
Central  
Europe?*

But traces of epipalaeolithic men who might be the authors of the Danubian culture are conspicuously lacking in this area. Some authors accordingly look to the Baltic to provide the

*The  
Baltic*

<sup>1</sup> *WA.* ix, pp. 20 ff.

<sup>2</sup> *Urgeschichte*, p. 774.

ancestors of the Danubians. Professor Kossinna<sup>1</sup> would derive them from the Scandinavian Shell Mound folk of Littorina times. The sole link is a rather far-fetched resemblance between the Shell Mound pick of flint and its greenstone analogues from Nøstvet on the one hand and the shoe-last celt on the other. Actually this hypothesis requires the Danubians to have traversed wide belts of forest land at the height of the Atlantic epoch.

Franz,<sup>2</sup> more wisely, looks back to Ancylyus times. He insists on the similarity, long before noted by Reinecke,<sup>3</sup> between the bone chisels from Maglemose and the shoe-last celt, and reminds us further of the mace-heads from Danish sites and the ground and perforated pick from Holmegaard. He does not, however, advocate an immigration direct from the Baltic; but looks rather to the south-eastern outposts of Maglemose culture, for instance in Poland, admitting also 'Campignyan' and other influences.

*The South-east* Czech archaeologists, on the other hand, are agreed in deriving the Danubian culture from the south-east. Stocký<sup>4</sup> in particular has demonstrated in a masterly manner the deep-seated affinity between Bohemian ribbon ware and that of Butmir, Vinča, Tordos, and other south-eastern sites. While denying to these sites any absolute priority, he regards them as manifestations of a culture parallel to the Moravian and sprung from the same Hungarian root.

The kinship between the Danubian culture of Moravia and those of the Middle Danube area has indeed been universally accepted. But until the relative chronology of the Upper and Middle Danubian cultures be established it remains theoretically possible to invert the relationship postulated by the Czech school. The requisite chronological framework may however be deduced from the cultural sequences established in Moravia and Serbia respectively.

*Danubian I and Vinča I Chronology* In the former area the end of the first period in which Danubian I culture had flourished was marked by the intrusion of a new culture termed Danubian II. Now many of the phenomena distinctive of Danubian II in Moravia make their first appearance in Serbia at the beginning of Vinča II. It follows then that *part* of the long period represented by the four or more metres of Vinča I must be parallel to Period I in

<sup>1</sup> *Die Indogermanen*, p. 75; cf. Childe, *Aryans*, p. 171.

<sup>2</sup> *MAGW.* lvii, p. 26.

<sup>3</sup> *MZ.* iii (1908), p. 45.

<sup>4</sup> 'Studie v Českem neolitu' in *PA.* 1919-20; *PZČ.*, pp. 39-45.

Moravia; we shall see that there is probably an overlap between Danubian II and Vinča I. Danubian I in Moravia may therefore be synchronized approximately with Vinča I; Period I is a chronological division applicable to the whole Danubian area.<sup>1</sup>

The significance of parallels between Vinča I and Danubian I being thus determined we proceed to recapitulate them.

Neither the simple round-bottomed bowls nor the spiral decoration occur early in Vinča I. But bottles, similar to the Moravian, do occur there, and the use of lug-handles, sometimes developed into fist-like forms, and of ornamental animal heads projecting from the vase walls is common to both cultures. The decorative technique of ware I at Vinča agrees with that used on Danubian I ware—but most closely with the latest style<sup>2</sup>—and the skeuomorphic style of the latter can be paralleled at Vinča I. Crude clay figurines were made in both areas, and human shapes with upraised arms appear incised or in relief on the walls of vases.

The distinctive stone implement in both areas was the shoe-last celt. The disk-shaped mace-head may probably be added as a further link.

Shell bracelets were worn by the people of Vinča I as by the Danubian I folk. The *Spondylos* shells used by the latter must have been imported from the Mediterranean, and have actually been found on the Lower Danube and perhaps in Vinča I itself.

The habitations in both areas were partly subterranean. Vinča illustrates the curvilinear plan, Tordos the rectilinear.

A perfectly rational account of the genesis of the Vinča I civilization has already been given. The agreement between it and the contemporary culture of the Upper Danube implies that the latter was derived from the same south-eastern source. That inference may be fortified by certain theoretical considerations.

Schliz<sup>3</sup> and Schuchhardt<sup>4</sup> have shown that the Danubian I a vases imitate gourd forms. The gourd, however, will certainly not harden north of the Bakony. The true region for gourd vessels lies south of the Balkans, but it is grown and used even to-day in Serbia and all over the Hungarian plain for vessels.

<sup>1</sup> It will, perhaps, in the end turn out that the levels at Vinča containing spirally decorated pottery, from 6.15 to 5.5 m. deep, belong in time to Period II.

<sup>2</sup> Cf. Stocký, *PA.* xxxiv, p. 572, and *PZČ.* pp. 39 f.

<sup>3</sup> *ZfE.* 1906, p. 342.

<sup>4</sup> *PZ.* i, p. 51.

So it may be significant that clay imitations of gourds appear first just where the genuine article would cease to be available—in the region of the Bükk culture. That would explain the absence of gourd forms at Vinča. The pattern on a linear vase from Heilbronn<sup>1</sup> is unmistakably representative of a palm—a reminiscence of a more southern home.

*Palm ornament*

*Origin of animals*

Some at least of the domestic animals and plants of the Danubians must have been brought from the south-east. Of the breeds of cattle, that derived from the *Primigenius* stock might theoretically have been tamed locally. The ancestry of *Bos brachyceros* is still disputed, but he was certainly bred in very early times by Minoans and other Aegean folk. The European neolithic pig, *Sus palustris*, has been traced to the wild boar of Hither Asia, *Sus vitatus*, in which case he would certainly be an import from the south-east. The Danubian swine have generally been assigned to the *palustris* stock, but after a very careful study of the skeletal remains, Staffe<sup>2</sup> concludes that they really belonged to a domesticated variety of the European boar, *Sus scrofa ferox*. The Danubian sheep admittedly belongs to the family of *Ovis aries palustris*, whose descent from the Asiatic urial, *Ovis vignei*, is still unchallenged.

*Home of grain*

None of the Danubian grains could be derived from a grass growing wild farther north than the Balkans. The wild ancestors of the Danubian wheat, *Triticum monococcum*, grow in Asia Minor, the Eastern Balkans, and Southern Serbia. The plant was cultivated at Troy and in neolithic Thessaly, but not apparently in the southern or western Mediterranean lands. Its use can therefore only have been brought to Poland and Saxo-Thuringia along the Danube. The emmer identified in the Rhineland and Belgium may have reached those countries independently along the western sea route. The Danubian barley was presumably introduced by the same route as the wheat. The exact agreement, rather later, between the barleys (*Hordeum hexastichon*) from Troy and Lengyel deserves notice.

*Origin of spiral*

The essentials of Danubian I culture can therefore be derived from the south-east up the Danube corridor. There is one exception. The spiral and maeander characteristic of Period I in Moravia are lacking in earlier phase of Vinča I. Menghin suggests very plausibly that these motives had been inherited from the geometric repertoire of Upper Palaeolithic art in Central and Eastern Europe.<sup>3</sup> Perhaps the transmission

<sup>1</sup> PZ. ii, p. 137 and fig. 29c.

*Nahrung*, p. 1037.

<sup>2</sup> *Real.* xi, p. 382. Cf. Menghin, <sup>3</sup> It will be recalled that something



was effected by the epipalaeolithic tribes inhabiting the dunes of North Hungary. Still, in view of the high antiquity of the running spiral in Sumerian goldwork,<sup>1</sup> it is possible that the motive may have reached Central Europe from Anatolia. Matz, however, holds that the spiral was simply a development of the primary skeuomorphic zig-zag ribbon (p. 51) in response to inherent aesthetic tendencies. If this motive, to which the East Mediterranean area and even Egypt<sup>2</sup> offers such abundant parallels, be the basis of all Danubian ornament, it will form a fresh link with the south-east.

The neolithic civilization was introduced into the löss lands of Northern Serbia and the Banat by colonists coming up the Danube from the Black Sea and the Aegean. It was essentially East Mediterranean in character albeit somewhat degraded. A yet more impoverished version of the same culture extends from the löss areas of Northern Hungary and Lower Austria over all the suitable land of Central Europe, spreading, a shade more degenerate still, to the Rhine and the Meuse. The southern frontier of the northern culture begins precisely where the geographical conditions favoured colonization by people coming from the south by water. Its rise might therefore be attributed to a northward extension of the same colonizing current that led to the foundation of Vinča.

It is not, however, certain that the northern Danubians were as a whole identical with the Anatolian-Mediterranean settlers at Vinča. The incoming colonists would have found epipalaeolithic tribes inhabiting the dunes of Northern Hungary. An admixture between newcomers and aborigines may certainly be assumed. It is even possible that the northern culture, Danubian I as a whole, may have been the result of the adoption by the indigenous tribes of the southern culture brought up the Danube. It is further possible that the beginnings of Danubian I a—i.e. the first impact of southern folk on the North Hungarian hunters—go back to a period not yet tapped in the deposits of Serbia, underlying Vinča I, and that the first southerners came with gourds rather than pots.

Be that as it may, the Danubian corridor was in fact, as we expected, the passage-way by which the civilization of the Eastern Mediterranean, albeit filtered and impoverished, was diffused to Northern and North-Western Europe.

quite like the Danubian disk mace-head, as well as steatopygous female figurines, belonged to the same com-

plex, p. 13 above.

<sup>1</sup> *Antiquity*, ii, p. 60

<sup>2</sup> e.g. *JEA*. xiv, p. 268, fig. 6.

## V

# THE CIVILIZATIONS OF PERIOD II

## I. VINČA II

*Extension of settlement* THE southern influence which we traced in the last two chapters appears intensified in Period II, which begins before the end of Vinča I in Serbia, and with the intrusion of Danubian II into Moravia. At the same time there is a large extension of the settled area in the Middle Danube valley, a fact to be explained partly by the onset of drier climatic conditions in the Subboreal Epoch. The culture of Vinča II, which is largely a continuation of that of Vinča I, spreads inland from the Danube into Southern Serbia and up the Save and the Drave. From Jablanica<sup>1</sup> near Medjuluzje and Gradac in Serbia, Jakovo<sup>2</sup> and Samatovči<sup>2</sup> in Slavonia, and Donja Klakari<sup>3</sup> and Donja Mahala<sup>4</sup> on the Save in Bosnia, as well as from certain sites on the Bosna, comes much material that can best be paralleled in Vinča II. But all these sites have yielded ceramic and lithic types that almost certainly belong to a later epoch, probably the Bronze Age. For the moment we shall neglect these, and confine our attention to objects whose attribution to Period II may be justified by the stratification at Vinča. We shall here describe the Vinča II culture, remembering that Vinča I probably outlasted Period I.

*Pottery* All the wares of Vinča I, except red-slipped ware, survived into the second period. Fluted and burnish-decorated ware extended also to Jablanica. The coarse incised ware, represented at all the above sites, is more carefully ornamented than before. The dots, filling the ribbon, are made with a sort of comb as the regular spacing shows. The incisions are filled with white paste.

*Lugs and handles* True handles are not yet in use. Perhaps, however, the old lugs had already started on a course of evolution that was to lead up to the thumb-grip handles familiar from Macedonia, an evolution already accomplished in Crete in neolithic times.<sup>5</sup> The string-hole is now horizontal and is enlarged until big enough to allow of the insertion of a rope; it was doubtless

<sup>1</sup> *AfA.* 1902, pp. 517 ff. Prof. Vassits excavated this site before he attained that skill which he displayed at Vinča, and failed, at least in his report, to distinguish the stratification.

<sup>2</sup> Unpublished. Material at Zagreb.

<sup>3</sup> *WMBH.* xi, pp. 36 ff.

<sup>4</sup> *Glas. Zem. Muz. BH.* xxxvii (1925), pp. 137 f.

<sup>5</sup> Evans, *Palace*, i, fig. 7.

designed to keep a rope sling in place. The terminal horn is retained and even exaggerated. The same development is observable at Tordos, Jablanica, and Jakovo as in Thessaly.<sup>1</sup> Parallels occur as far north as Grosswerdein (Oradia Mare). Anthropomorphic lids and vases with figures in relief become scarcer at the 5.5 m. level in Vinča, but still occur up the Morava at Gradac. But possibly bowls standing on a pair of human legs from Vinča,<sup>2</sup> Klakari, Csóka, and Tordos belong to the period under review; they have not been found in the course of scientific excavations. The ordinary pedestalled bowl occurs

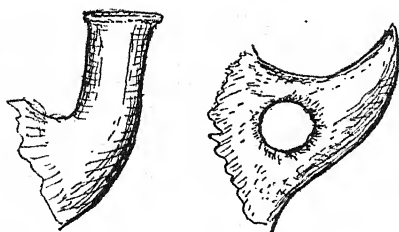


FIG. 34. Growth of lugs in Syrmia, from sketches made at Zagreb.  $\frac{2}{3}$

in a typical Danubian II form (with hollow foot) at Samatovci, Klakari, Donja Mahali,<sup>3</sup> Novi Šeher, and Csóka, at the last site sometimes 'crusted' as at Lengyel. Side by side with the old fabrics crusted ware appears at Vinča and Csóka, while painted wares are found at Tordos.

In the stone work no certain advances are detectable apart from the use of obsidian that begins with Vinča II and is also attested for Csóka, Samatovci, and Klakari. The latter sites have yielded a multitude of perforated axes and mace-heads, some of which may belong here though no perforated implements were found *in situ* in Vinča II.

The horn harpoons remained in use but were supplemented by stout fish-hooks which were also used at Jakovo. These imitate copper models, and a copper specimen was actually found at Vinča. Horn mattocks, bored for shafting, appear first in Vinča II.<sup>4</sup>

Except along the Maros copper is scarcely more common in deposits of Period II than in the preceding epoch.

<sup>1</sup> Tsountas, 4-Z, figs. 214-17, shows a transitional phase like that just described.

<sup>2</sup> Starinar, 1908, p. 187.

<sup>3</sup> Glas. Zem. Muz. BH., l. c., cf. SV. vii, fig. 11, for an exact parallel from Silesia (Danubian II).

<sup>4</sup> PZ. ii, p. 21, fig. 6.

Stone  
obsidian  
Bored  
axe-heads

Fish-  
hooks

*Figurines* In the ritual objects there is more diversity than heretofore. The figurines of Period II are often excellently modelled; the face, hair, and limbs are all indicated, nudity is no longer an invariable rule; sitting types appear beside the older erect form. The *kourotrophos* type, a seated female nursing a baby, was taken over from Thessaly and the Aegean<sup>1</sup> (Fig. 35a). The clothed goddesses wear a sort of apron which in some cases is daubed all over with white, presumably indicating linen. Fig. 35b shows the fragment of a woman sitting or squatting before a hollow cylindrical object (broken off in our example).

*Libation tables* Another class of ritual object, probably assignable to this period, is the 'libation-table' with a hollow in the centre (Klakari) or supporting a small bowl (Vinča ?II) (Fig. 36), a type likewise found in Thessaly and up the Tisza as far as Sövényháza. The old style of four-footed table still subsisted, and is attested at Jakovo as well as at Vinča II.

Among the ornaments inherited from the previous period we should note the six-spiked clay pendants which reached Jablanica, Jakovo, Samatovči, and Klakari. Stone and shell bracelets were still worn.

*Houses* The houses of Vinča II were no longer excavated in the soil. They were rectangular in plan and the walls were supported by posts. The roof was probably gabled and the gable-beam terminated in front in a bull's head as in the hut-urn from Tordos. The actual clay model used as a phineal has been found in the latest excavations at Vinča. There is another from Csóka, and the hut model from Střelice in Moravia (Fig. 44) is similarly adorned.

In its essence the culture of Period II on the Middle Danube was merely a continuation of that of the previous epoch under southern and also northern 'influences'. Its chronological and spatial limits are not yet satisfactorily defined. Above 'Vinča II' come strata containing Bronze Age wares. On stylistic grounds the polished orange wares from Jakovo and Samatovči should be quite as late. Even at Klakari a 'bronze' arrow-head was found.<sup>2</sup> So probably Vinča II lasted on well into Period III at least.

*Extension of settlement* The interest of the period lies in the extension of the area of settlement, rendered possible by the decay of forests through the increasing dryness, and perhaps accelerated by pressure from the north. Up the Morava the occupation of Gradac

<sup>1</sup> Cf. 4-Σ., pl. 31, 2; 'Ep. 'Apx. 1908, pp. 63 f.      <sup>2</sup> WMBH. xi, p. 43.

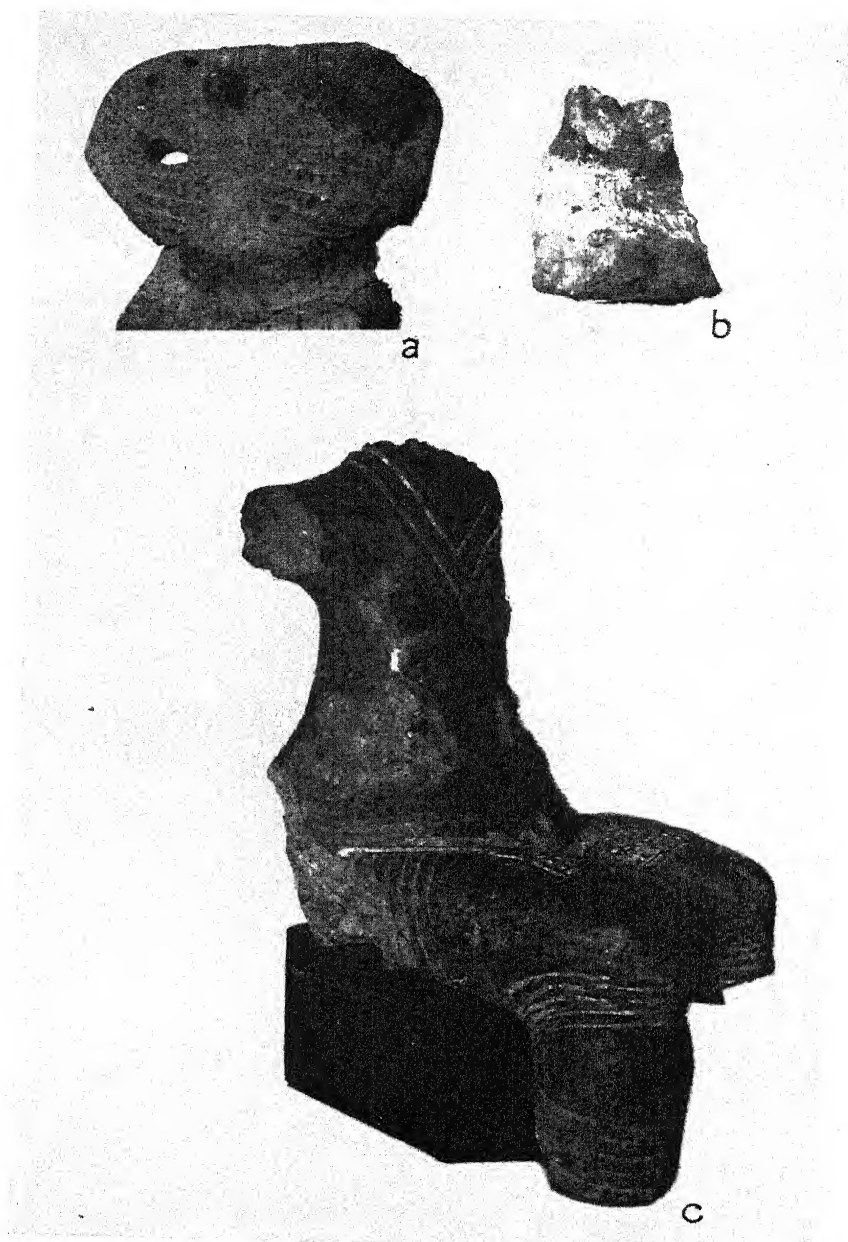


FIG. 35. *a*, Kouroutrophos, Gradac; *b*, seated female, Vinča; *c*, seated idol, Čaršija, M. Belgrad. *a* and *b*  $\frac{1}{2}$ , *c*  $\frac{2}{3}$





marked a step towards a new connexion with the Aegean across Macedonia. Perhaps political causes—the intrusion of vase painters into the Lower Danube valley—made such connexions desirable. Face-urns were still in use when the site was first occupied.

Westward some Danubians may have reached the Adriatic. There are spirals and knob ornaments on sherds from the Theresien cave<sup>1</sup> and Jama Pejca in the former Küstenland.<sup>2</sup> At the former site shells of *Spondylus gaederopus* were identified, and magnificent bracelets of the same mussel shell come from Razanča (Zadar) in Dalmatia.<sup>3</sup> The idea of the spiral ornament, the clay figurines, and the spheroid maces which are occasionally

Morava  
valley

The  
Adriatic

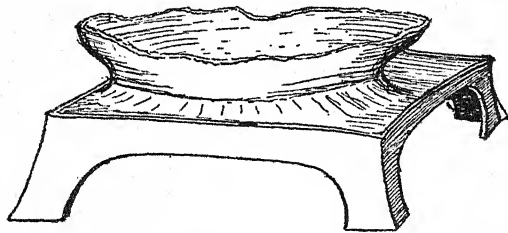


FIG. 36. Libation table, Vinča II, after Vassits.  $\frac{1}{2}$

encountered in Upper Italy may have been derived from the same quarter.

But no actual Danubian settlements have been identified on the Adriatic. The dwellers in the Istrian caves were hunters and pastoralists akin to the troglodytes of Upper Italy, South France, and Central Spain, skilled in the manufacture of arrow-heads, but without any agricultural implements of stone.<sup>4</sup> Traders from the Middle Danube may have visited these people—there is obsidian in the Theresien cave—in their quest for *Spondylus* shell when the Lower Danube was blocked, but that is all that is definitely proved by the remains yet unearthed.

Nor is the route clear. Along the upper Save in Carniola no Danubian remains have yet come to light. On the other hand, along the Upper Drave in Carinthia<sup>5</sup> settlements have been reported containing socketed ladles and sherds reminiscent of the more northerly Danubian II (Lengyel) culture.

<sup>1</sup> MPK. i (1887), pp. 13 f. Cf. Frankfort, *Studies*, ii, fig. 6.

<sup>2</sup> MAGW. xxxiii (1903), pp. (70) f.

<sup>3</sup> At Zagreb.

<sup>4</sup> Hoernes, *JZK*. iii (1905), p. 47.

<sup>5</sup> Franz, 'Österreich,' p. 7; *Nbl. d. Vzt.* iii (1927), p. 86.

*Butmir* It was different farther south. At least the open valley at the head of the Bosna was occupied about this date, and material of a similar type has been collected at Novi Šeher half way up the valley. The ruins of the famous neolithic village of Butmir form a little hillock on the alluvial plain between Sarajevo and the Bosna springs. The deposit was a metre thick with hearths of several levels.

*Pottery* At the site vast quantities of pottery were collected, only a fraction of which is available for study and whose stratigraphy is regrettably vague. The ware is generally coarse and gritty, and is rarely decorated. Few forms can be identified. Piriform jars, bowls, and pots on a low foot, 'fillers' (as at Lengyel), and heavy pithoi are recognizable. Besides lugs, small loops and even bilobate handles were in use, but they are all better adapted for rope supports than hand-grips. Miniature vases were freely manufactured. In addition we have four-footed libation tables as at Klakari.<sup>1</sup>

*Ornamentation* The minority of sherds that are decorated at all exhibit disconcerting variety of motives. On large vessels plastic slashings and finger-tip impressions constitute the only decoration. Fluted ware as in Vinča I and II is rare. We then have roughly incised ribbons with *pointillé* fillings, still mainly arranged in the skeuomorphic zig-zags of Vinča I, and chequers and lozenges in a like technique. Again there are narrow hatched ribbons forming lozenges and spirals and lines bordered with points in pure Jordansmühl style.<sup>2</sup> Occasionally stamped concentric circles or applied knobs appear. Finally, the Danubian running spiral luxuriates over the vase surface. It is sometimes incised or 'furrowed'<sup>3</sup>; at other times in relief either in the form of broad, smooth ribbon-mouldings, which irresistably suggest carving in wood or stone, or of thin wiry coils. Besides the running spiral we have interlacing spirals in triple or quadruple groups. Dr. Stocký further discovered some painted sherds, but these are not exhibited.

*Stone implements* The stone artifacts are also varied. Implements were manufactured on the spot on a large scale. We have specimens in all stages of manufacture, together with the slabs on which they were eventually ground. Though shoe-last celts predominate, there are genuine axe-heads with squared small-sides. Perforated implements are not uncommon, and besides the hoe

<sup>1</sup> Frankfort, *Studies*, ii, fig. 12, c.

Bohemia) or fig. 52, below.

<sup>2</sup> Cf. *Butmir*, pls. 5-7, and *Real*, vii, pl. 202 (Levy Hradek nr. Rostok in

<sup>3</sup> Cf. p. 52 above.

with shaft-hole at right angles to the blade (like Fig. 56c), long, shapely axes with rounded butt-ends were in use.

The archaic disk-shaped mace-head was nevertheless retained amid these later types. *Mace-heads*

Flint and jaspis were worked up into hollow-, disk-, side-, and end-scrapers and borers. *Flints: Arrow-heads*

Tanged arrow-heads attest the use of the bow.

In the realm of religion the Danubian Mother Goddess is represented by excellent statuettes on which features and hair are indicated. The hands clasp the breasts or are upraised. No burials have been found, but the miniature vases may have had a funerary use. *Figurines*

Of the houses only irregular depressions, burnt plaster, and a few post-holes remain. The last were insufficient to allow of a reconstruction of the huts.

The villagers cultivated two wheats—*Triticum monococcum* and *T. vulgare* or *compactum*, barley (*Hordeum vulgare*), and lentils (*Ervum lens*). Their live stock consisted of the two breeds of cattle (*Bos brachyceros* and *Bos primigenius dom.*), swine, and perhaps sheep. The bones of game were so rare that hunting clearly played a negligible part in the economy of Butmir. *Grains Animals*

Butmir was essentially an industrial centre buried in the heart of the mountains, and must be judged accordingly. Its Danubian substratum is revealed clearly enough in the shapes and decoration of the pottery, in the shoe-last celts and disk-shaped mace-heads, in the figurines and ritual vessels. But its affinities lie essentially with Vinča II and the uppermost strata of Vinča I, and even the more northerly sites of a like age such as Jordansmühl. But there are elements foreign to the Danubian complex in the flint work, especially in the arrow-heads, in the flat axe-heads, and in the rough pottery. Such things would be more at home in the cave culture of the northern Mediterranean coasts, and it is not improbable that the Danubian peasants at Butmir were manufacturing them for barter with the nomadic pastoralists of that group. But direct proof of the presence of such neighbours is lacking as yet. *Affinities: Danube*

The technique and form of the Butmir spiral ornament is suggestive of wider relations. The quadruple spirals have often been compared to the decoration on the stelae and rapiers from the Shaft Graves at Mycenae. But the pattern goes back in the Aegean far beyond M.M. III. It was being incised in *The Aegean*

clay,<sup>1</sup> engraved on ivory,<sup>2</sup> carved in relief on stone,<sup>3</sup> and wrought in gold wire<sup>4</sup> in Early Minoan times. It is difficult to avoid regarding one of the last two examples as revealing the immediate prototypes of the Butmir designs. Moreover, the axe-heads with squared small-sides suggest metal models. Hence we must assume that somehow, possibly up the Adriatic and the Narenta, Aegean objects of stone or metal were finding their way to inner Bosnia. Perhaps they were brought by the assumed 'cave people' of the coastal zone in return for the axes and arrows manufactured by the peasants of Butmir. On the other hand, since similar spirals, but incised only, are found at Tordos, the route may have been the old Danube corridor.

So we discover in Period II not only an extension of the Vinča culture in the Lower Danube but also the establishment of new links with the Aegean area.

*Lateness of Butmir* The late date here assigned to Butmir in opposition to most authorities may be justified by three lines of argument. In the first place, the forms and ornamentation of the vases,<sup>5</sup> and then the stone implements, especially the axes, and the hoes like Fig. 56c, really agree closely with those of Period II at Vinča and still more farther north (Lengyel and Jordansmühl). And there are no grounds for regarding this quite eccentric station as an originative centre.

*Italian parallels* Secondly, the pottery from Pertosa and other Bronze Age sites in Central Italy,<sup>6</sup> though doubtless a little later, is too like that of Butmir to be separated therefrom by any great interval of time.

*Subsequent events* Finally, the lateness of the first colonization of the Upper Bosna, that might be expected both on geographical and climatological grounds, is only on a par with the subsequent history of the region. The Butmir culture is succeeded by the Slavonian culture of Debelo brdo and the other hill stations that cannot begin before the end of Period III. Then there is nothing new until the Late Bronze Age.

In reality the peasants, who had come up the Bosna in Period II, seem to have lived on at Butmir until the end of Period III.

<sup>1</sup> Fimmen, fig. 131 (Early Cycladic). Cf. Frankfort, *Studies*, pl. vi.

<sup>2</sup> Xanthudides, pl. iv, 516 (Koumasá)

<sup>3</sup> *Ibid.*, pl. xi, 1904a (Plátanos); cf. the Melian pyxis.

<sup>4</sup> *Ibid.*, pl. xv, 455 (Plátanos). The discovery in 1927 of gold disks ornamented with spiral coils of gold wire

in 'predynastic' graves at Ur (circa 3500 B.C.) disposes of Dr. Frankfort's contention that such Minoan spirals must have been inspired from Bosnia. Cf. Hall in *Antiquity*, ii, p. 60.

<sup>5</sup> Cf. n. 2, p. 72. Cf. further *Mannus* xi-xii, p. 316, fig. 12 (Rössen).

<sup>6</sup> Peet, *op. cit.*, p. 402.

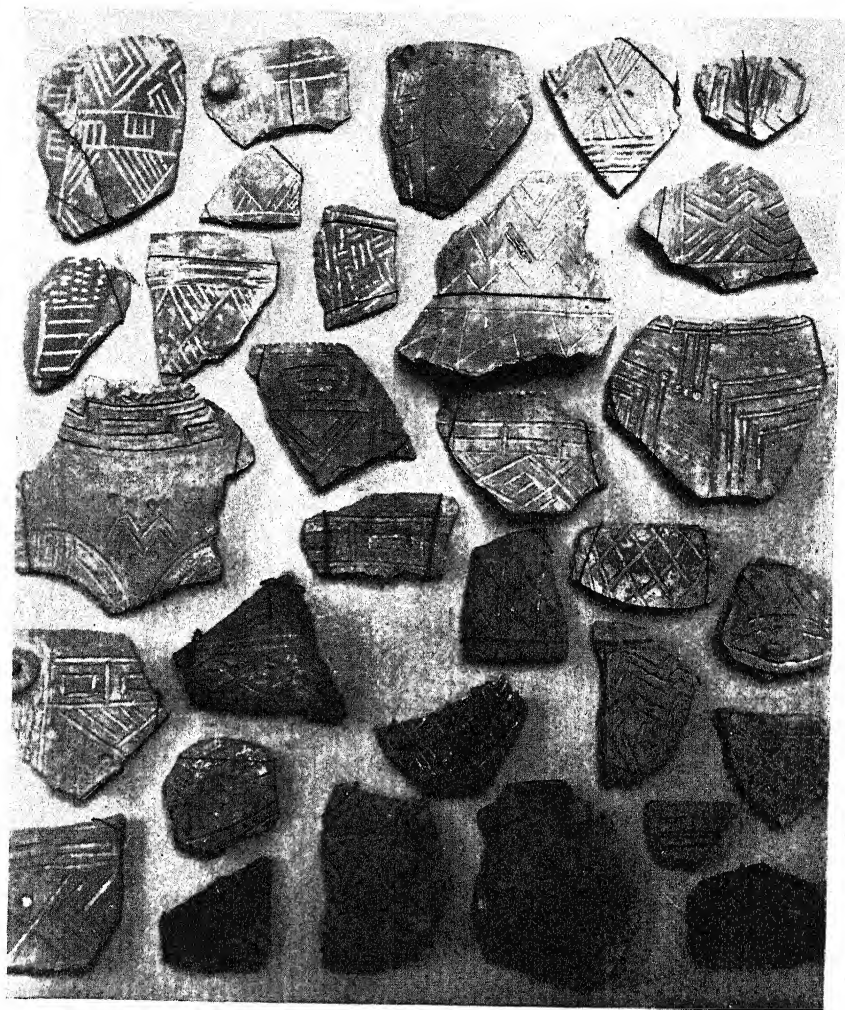
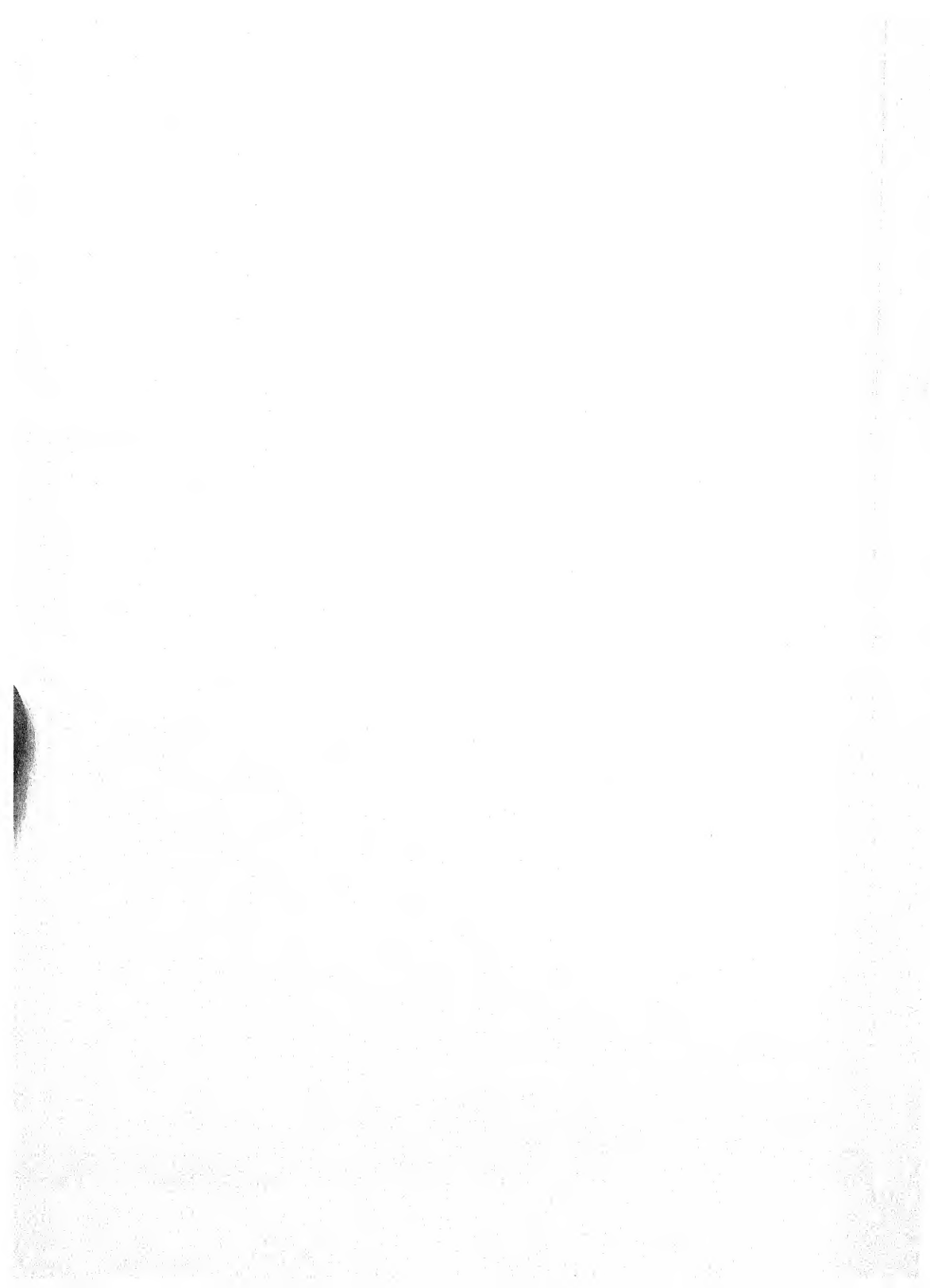


FIG. 37. Sherds from Csóka, Varosi Muzeum, Szeged





Then they were expelled by the pastoralist tribes who occupied Debelo brdo.<sup>1</sup> The refugees escaped to Italy where they appear in Period IV.

If the Vinča culture extended to the south and west that was partly to counterbalance ground lost farther north. At Csóka and Tordos most characteristic Vinča II types are missing though the latter site has yielded many sherds agreeing precisely with Butmir.<sup>2</sup> Instead we have traits which serve as links with the new complex evolving in the north, and the Erösd civilization of the east. Stratigraphical evidence for the various elements of culture at Csóka and Tordos is not yet available, but we may place here the following innovations.

The most striking novelty is a mud-coloured or black ware, ornamented with deep incisions encrusted with white paste (Fig. 37). The only discernible form is a small barrel-shaped vessel. Such have, near the rim, a round or heart-shaped

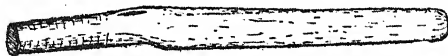


FIG. 38. Copper Axe from Csóka, from a sketch.  $\frac{1}{3}$

button, through the centre of which a hole passes to the interior of the vase—a contrivance that often resembles the 'spout' of Bükk vases. The ornamentation is arranged in vertical and horizontal panels filled with small geometrical figures including the swastika. Groups of concentric circles between triangles may be intended vaguely for human faces. The spirit in which this ware is decorated is like that animating the incised counterpart of Dimini ware in Thessaly,<sup>3</sup> and a generic connexion is not impossible, while the influence of the Bükk family is undeniable. The Csóka pottery is, however, occasionally 'crusted' with red colour. Some heart-shaped button handles from Csoka have been worked up to suggest a human face with slits for eyes and mouth and a pimple for the nose, just as in the Bükk caves. The same fabric is found north of the Maros at Öcsanád.

Both Csóka and Tordos<sup>4</sup> have yielded sherds of dark-faced ware from which small square or triangular pits have been carved out and filled with white substance; this technique was more freely employed in the Aegean, in Bulgaria, in the Slavonian ware described below (p. 211), and at Laibach Moor.

Pending stratigraphical data we might assign to this phase

<sup>1</sup> *Infra*, pp. 212 ff.

<sup>2</sup> Frankfort, *Studies*, ii, p. 29, n. 3.

<sup>3</sup> *A-E*, pl. 17.

<sup>4</sup> *ZfE*. xxxiv (1903), p. 452.

*Csóka and  
Tordos*

*Pottery*

*Fret-  
work pot-  
tery*

*Copper axes* spheroid mace-heads, a very primitive copper axe-adze from Tordos, and a curious copper axe from Csóka. The latter is 18 cm. long and very narrow. The shaft-hole is about 5 cm. from the butt which has an almost circular cross-section (Fig. 38). Some of the graves from Csóka, mentioned on p. 31 above, might just as well belong to Period II.

## II. POLGÁR CULTURE

Very closely related to Vinča II, but beginning rather earlier, are two interrelated groups focussed farther north, which we shall term the Polgár culture and the Lengyel-Jordansmühl culture respectively.

*Sites* The first of these is best known at Polgár<sup>1</sup> and Kenezlő-Fazekas on the Tisza and at numerous sites in the löss region of Southern Moravia.<sup>2</sup> Similar material to that gathered at these stations comes from various points in Lower Austria,<sup>3</sup> and some sherds found on the Gran(Hron) in Slovakia<sup>4</sup> link the two groups. The hill settlement at Lengyel in Tolna County occupies an intermediate position between this and the next group, but the Hungarian National Museum possesses a very typical pedestalled goblet and other vases with heavy crusted spirals

*Phases* from Tolna County. In Moravia ceramic styles allow of a division of the Polgár culture into three phases. In settlements of phase A Danubian I b sherds still occur; pottery of phase C is found overlying that of phase A and separated from it by a sterile deposit 0.5 m. deep. B is considered later than A, chiefly because copper is met in this phase.<sup>5</sup> At least the first two of these styles are represented also at Polgár itself, but no stratigraphical separation of the material has been made at that site which was never scientifically excavated.

*Phase A.* The typical pottery of phase A is a fine carbonaceous black ware, probably fired in a sort of kiln. The surface is always polished. The distinguishing feature is the ornamentation, which consists of patches of earth colours applied thickly after the burnishing and firing of the vase. Red, white, yellow, and orange are the commonest shades, two or three colours being often used together. The patterns are very elaborate and in-

*Pottery:*  
*Crusted*  
*Ware*

<sup>1</sup> Unpublished.

<sup>2</sup> Palliardi, *Chron.*, p. 9; MPK. i (1897), pp. 237 f. *Pravěk*, 1911, pp. 40f. Cervinka, *MS.*, pp. 74-84. There are sherds even in Bohemia, Stocký, *PZC.*, p. 76; Schráníl, *Böhmen*, p. 50.

<sup>3</sup> WPZ. x, pp. 1-10; Menghin, *Nieder-österreich*, p. 12.

<sup>4</sup> WPZ. xi, pp. 110-17.

<sup>5</sup> Palliardi later treated 'phase C' as a mere subdivision of the second phase B; cf. Schráníl, *Böhmen*, p. 52.



FIG. 39. Crusted ware, Jaroměřice. M. Brno

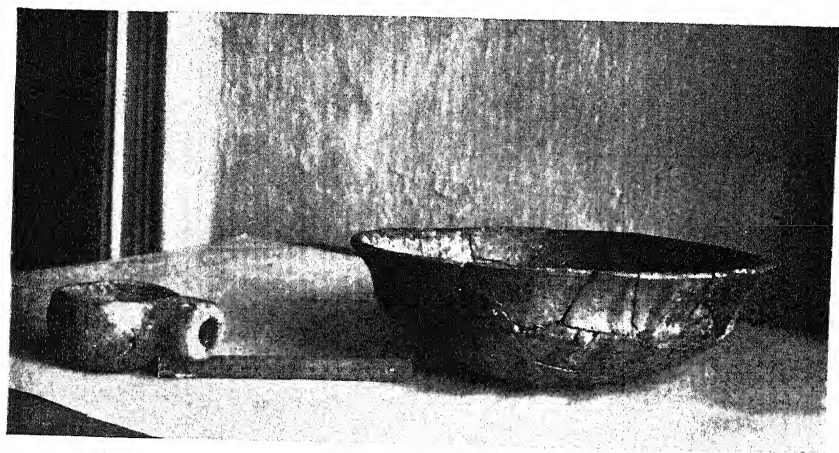


FIG. 40. Crusted ware, Střelice I. M. Brno

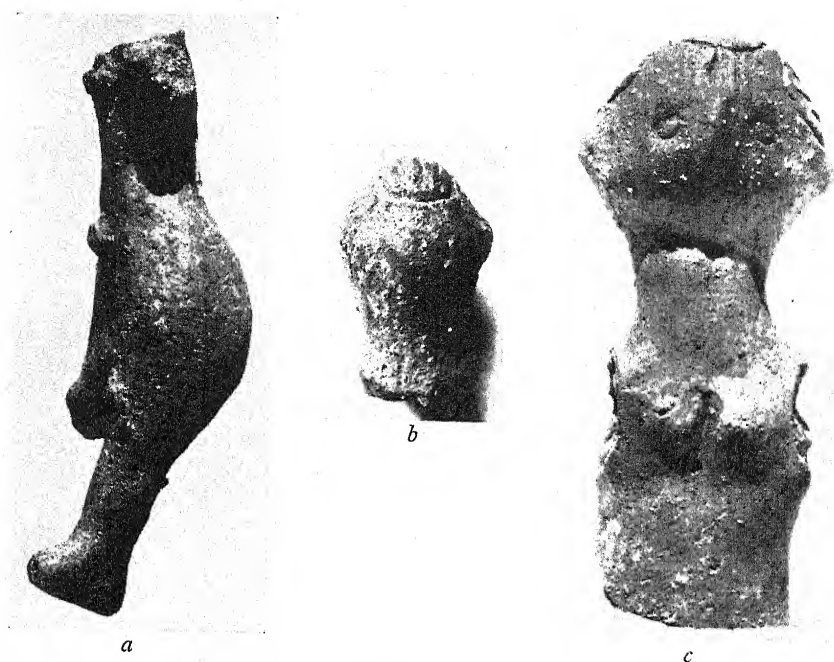


FIG. 41. Figurines. *a, b*, Boskovštýn; *c*, Střelice. M. Brno. 3

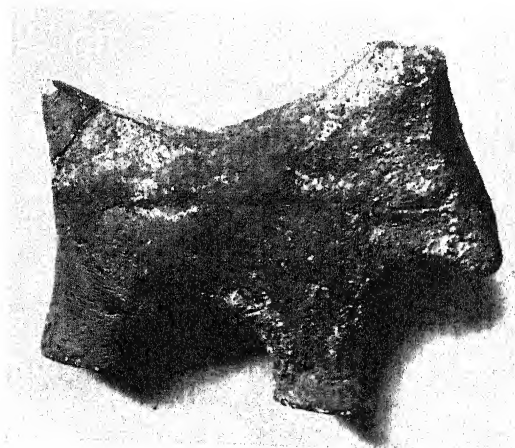


FIG. 42. Animal model, Střelice. M. Brno. 1

clude stripes, zigzags, maeanders (Polgár), triangles, stumpy spirals (Moravia), chequers, saltires, and kidney-shaped blobs.<sup>1</sup> At Polgár the white is often used as a border for the red stripes. A distinct tendency to group the patterns in vertical panels is detectable. In addition to this polychrome decoration flat bosses or buttons were often used ornamentally. In some cases simple incised patterns, including hatched maeander ribbons, underlie the crusted colours. These recall negative Bükki ware on the one hand and Jordansmühl ware on the other.

The forms are varied. The leading Moravian types are *Forms* shown in Figs. 39-40. Big bottles, which seem descendants of

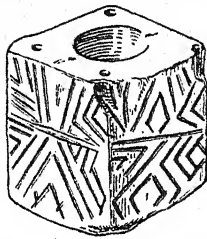


FIG. 43. Cubical vase, Lengyel, after Wosinski.  $\frac{1}{2}$

Danubian I forms like Fig. 18b, are not observable at Polgár, but the dishes and beakers, always with a marked keel, were common. Neither handled vessels nor pedestalled bowls occur regularly in this fabric in the Moravian sites. Still such bowls, but either uncoloured or painted in a dark on light technique, are not uncommon at Polgár, and there is one with crusted white and red daubs from Gössing in Lower Austria. The horn-like lugs are the nearest approach to handles. Conical lids surmounted by a crest-shaped projection, bowls with a short tubular spout, and queer clay boxes of parallelepiped shape with thick walls also occur in this fabric in Western Moravia. *Spouts*

Ladles with a perforated projection to serve as the handle—the so-called ‘socketed ladle’—are distinctive of the culture *Socketed ladles* (Fig. 40a) as are the clay copies of the cubical ‘paint-pot’ common in Early Minoan stone-work (Fig. 43);<sup>2</sup> some even have two compartments as in Crete.<sup>3</sup>

Miniature vases are very common.

The shoe-last celt remained characteristic in this phase; *Stone implements* with it were associated in Moravia small triangular celts with a

<sup>1</sup> *MAGW.* lviii (1928), pp. 70 ff.

<sup>2</sup> *MAGW.* lvii, p. (185).

<sup>3</sup> Schráníl, *Böhmen*, pl. vii, 12.



blunt butt, sometimes of greenstone (nephrite). Possibly they were shafted with the aid of horn sleeves. Perforated implements are represented by an asymmetrical axe resembling a thick shoe-last celt with a shaft hole parallel to the blade (Fig. 56d).

*Obsidian* Besides flint, obsidian now appears regularly both in Moravia and on the Tisza. The material seems to be derived from the Hegyalja Mts. in North Hungary, not very far from Polgár.

*Rock crystal* Chips of rock crystal have been collected both in Moravia (Jaroměřice) and on the Tisza. The arrow-head does not occur.

*Marble beads* The only bone implement deserving mention is a fish-hook from Kenezlő-Fazekas, but probably perforated horn axes were now in use. Among the ornaments worn were marble beads; the material may come from the Bihar massif.

*Figurines* Female figurines are very common at this epoch. The Moravian examples are often finely modelled; the hair, features, and even the toes are distinctly indicated (Fig. 42). Both erect and seated types were in vogue. The former were occasionally modelled in two longitudinal halves which were subsequently stuck together before baking. Model thrones were manufactured for the sitting goddess to rest upon. At Polgár figurines are rarer, but even there the legs were separated. From Moravia come further a few flat models of animals (Fig. 43) and a goose. Most remarkable is a theriomorphic vase in the shape of a two-headed 'goat' (? bull or horned ram) from Hradisko near Kromeríž.<sup>1</sup>

'Spindle-whorls' are not found.

*Houses* The material is derived from the usual hut-foundations, hollowed out in the soil, but a fragmentary model at Brno seems to represent the gabled roof of a house of the Střelice type described below.

*Graves* At Jaroměřice a cremation grave containing ashes in an urn was found among the house, but elsewhere interments in the contracted attitude have been noted.

*Skulls* We have a stray skull, perhaps derived from a grave, of a peculiar brachycranial type, from Stillfried in Austria.<sup>2</sup>

*Animals* Remains of swine, sheep, and a small horse (? domesticated) and *Bos primigenius* (? domesticated) have been identified in the settlement at Znojmo.<sup>3</sup>

*Phase B* To the second phase (B), Palliardi assigned pottery with red designs on a light ground or with white patterns crusted on a

<sup>1</sup> Schráníl, *Böhmen*, pl. VII, 11.    <sup>2</sup> *MAGW.* xlviii (1919), p. 247.

<sup>3</sup> *MPK.* i, p. 246.



red surface. With the second Moravian fabric may be compared a fine red ware common at Polgár, but sometimes decorated with black as well as with red colour. Similar material has been collected in the plain of Trnava in Slovakia.<sup>1</sup> Some sherds of this group from Raigern (Rajhrad), south of Brno, now at Vienna,<sup>2</sup> seem to have been first coated with white and then with red, the pattern being eventually produced by scraping off the red. This technique recalls that used at Lianokladhi in Thessaly in the first neolithic period. Moreover, from

Pottery

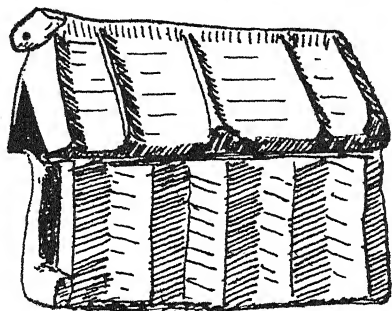


FIG. 44. Hut model, Střelice II, M. Brno.  $\frac{1}{3}$

Střelice II come two sherds with genuine red paint on a white slip that look remarkably like Thessalian A 3  $\beta$  ware. Curvilinear motives are rare in phase B. The vase forms are the same as before, but the pedestalled bowl is certainly attested also in Moravia.

The stone implements show few innovations. Obsidian was no longer imported into Moravia, though it is found in a deposit of the period at Weikersdorf in Lower Austria. The deers' horn axes occasionally have a squared hole for the shaft.

'Spindle whorls', in the form of small clay disks, and pyramidal 'loom weights', were now being manufactured.

Weaving

Interesting ornaments are a copper ring from Střelice II, and imported Mediterranean shells (*Cassis saburon*) from Weikersdorf.<sup>3</sup>

Mediterranean shells

The domestic architecture of the period is illustrated by the model from Střelice II, shown in Fig. 44. It represents a rectangular house with a gabled roof supported by stout posts. The gable terminates in front in a bull's head. Actual finials of this form modelled in clay have been found at Vinča II and Csóka.

Houses

<sup>1</sup> IIA.ii, p. 338.

<sup>2</sup> MPK. i, pl. v, 7. Cf. Schránil, *Böhmen*, p. 53.

<sup>3</sup> WPZ. x, p. 3.

*Phase C.* The last phase in Moravia is represented by pottery with designs in white on a black ground, which is sometimes rubbed over with graphite. Other characteristic innovations are:

Symmetrical heart-shaped axes of stone, perforated (Fig. 56a) for hafting.

Chisels with an almost rectangular cross-section.

Ladles with a solid crook handle.

Clay stamps (*pintaderas*).

A figurine with upraised arms (Fig. 46).

Biconical whorls.

In the Moravian settlements of group C, pots with slashed mouldings characteristic of Period III already begin to appear.

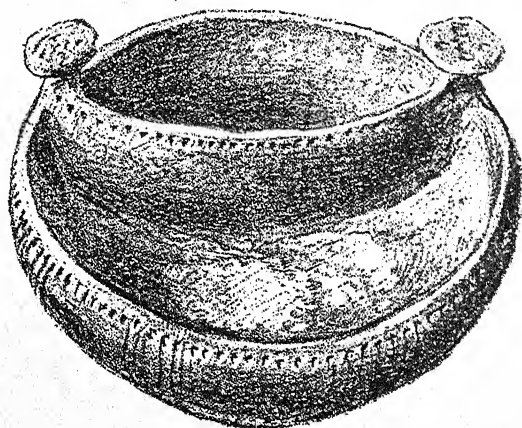


FIG. 45. Vase from Péczel, after Hampel.  $\frac{1}{3}$

*Miscellaneous finds* A few objects from Polgár do not fit into the Moravian scheme. Several curious bowls of black ware, divided by a partition into two unequal compartments, deserve notice. On the outer rim at the ends of the partitions sit big button handles (Figs. 45 and 47, 2-3). The outer walls and the tops of the button handles are decorated with deep incisions filled with white paste which is also crusted on the surfaces as in ware A above. The patterns include chequers and stars. The latter device recalls that on Late Bronze Age sword pommels, but the technique of our vases is Danubian II. Analogous vases are known from Szerbkeresztur, south of the Maros,<sup>1</sup> from Pusztastvánháza,<sup>2</sup> from Péczel, east of Buda-Pest,<sup>3</sup> from Čenke, near Parkaň, on the Slovakian border,<sup>4</sup> and from near Ossarn in Lower Austria.<sup>5</sup>

<sup>1</sup> *AE.* xiii (1893), p. 302.

<sup>2</sup> M. Kecskemét.

<sup>3</sup> Hampel, pl. LXXVIII, 1.

<sup>4</sup> Gymnasium Bratislava.

<sup>5</sup> *Nbl. d. Vzt.* iv (1928), p. 6.



FIG. 46. Figurine with upraised arms, Stepanovice.  $\frac{1}{3}$

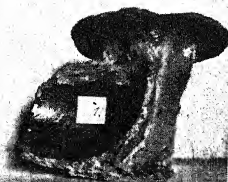


FIG. 47. Ansa lunata and handle of vase similar to Fig. 45, Polgár, M. Nyiregyháza



We find further at Polgár sherds, including pedestalled bowls, painted with geometrical designs in warm black on a pinkish slip, fragments of *ansa lunata* like Fig. 47, 1, and fine knobbed ware, a fabric which occurs in Moravia in Periods I and III. Conical vases with perforated walls occur as in Bronze Age sites. And it must be noted that even La Tène fibulae are included in the Polgár collection.

The site has further yielded a clay model of a boat in good red ware. The vessel has a distinct keel, and appears to be something more than a dug-out. *Boats*

### III. LENGYEL-JORDANSMÜHL

The cultures with crusted ware are known almost exclusively from settlements. Those with predominantly monochrome pottery are best represented by cemeteries. The pottery allows of the division of the material into four groups: an East Hungarian group on the Tisza; a West Hungarian group beyond the Danube in Hungary and Slavonia; a north-eastern group in Moravia, Silesia, Bohemia, and Saxo-Thuringia; and a north-western in Bavaria. The most important sites in the four groups may be enumerated here:

1. Lucska<sup>1</sup> in Sub-Carpathian Ruthenia—cemetery (Map III, 1).
2. Tiszadob,<sup>2</sup> County Szabolcz (Map III, 5)—cemetery.
3. Tiszadada (? cemetery) in County Szabolcs near 2.
4. Bodrogkeresztur<sup>3</sup> (Map III, 2)—cemetery.
5. Tiszaug (Map III, 7)<sup>4</sup>—large settlement and a few contemporary graves.
6. Tiszasás (Map III, 8)—remains of an extensive cemetery brought to light during drainage works.
7. Pusztastvánháza (Map III, 9)—extensive cemetery.<sup>5</sup>
8. Kovacshalom,<sup>5</sup> near Szeghalom on the Szebes (Map III, 10)—mound consisting of remains, perhaps of several settlements, together with graves.
9. Possibly the chalcolithic settlements and cemeteries recently excavated by Dr. Roska<sup>6</sup> at Bihar and Ermihályfalva may belong to this culture.

<sup>1</sup> *AE.* i (1881), pp. 272 f.

<sup>2</sup> No report available; material at Nyiregyháza.

<sup>3</sup> *WPZ.* xiii; cf. p. 61, n. 2 above.

<sup>4</sup> Material at Kecskemét unpublished.

<sup>5</sup> *AE.* xxxiii (1913), pp. 39 f. and 149 f.

<sup>6</sup> *Dacia*, i (1924), p. 313.

10. Szarvás, in County Békés—a low mound, 2 metres high, covering remains of huts and graves. The pottery is exactly like that from Óbessenyő.<sup>1</sup>
11. Sövényháza<sup>2</sup> (Map III, 13), north of Szeged—settlement of various dates.
12. Kurticsi,<sup>3</sup> near Arad—settlement of various dates.
13. Óbessenyő,<sup>4</sup> south of the Maros (Map III, 15)—settlement and graves of various dates.
14. Szerbkeresztur<sup>5</sup> (County Torontal)—settlement of various dates.

#### *Western Group.*

1. Lengyel,<sup>6</sup> in County Tolna (Map III, 17)—settlement and two cemeteries.
2. Tevel, Simontornya, and other sites in the same county graves (Map III, 16), furnished with similar pottery, came to light.<sup>7</sup>
3. Babska in Slavonia—graves.

Links between the two groups may be provided by Péczel (Map III, 18), where a bipartite vase was found, a chalcolithic grave containing a dagger like that from Bodrogkeresztur at Gödöllő, and Čenke near Parkaň on the Slovakian border<sup>8</sup> (Map III, 20).

#### *North-eastern Group.*

1. Gocnód in the plain of Trnava in Western Slovakia (Map III, 21).<sup>9</sup>
2. A growing number of graves and settlements in Central and North-Eastern Moravia, especially Némčice<sup>10</sup> on the Hana, Seloutka,<sup>11</sup> Krenovice,<sup>12</sup> near Austerlitz-Slavkov (graves), and Troppau<sup>13</sup> (Oppava).
3. Ottitz<sup>14</sup> in Upper Silesia—settlement.

<sup>1</sup> *AE.* xxxv, pp. 11 ff.

<sup>2</sup> M. Szeged.

<sup>3</sup> *AE.* xix (1899), pp. 18 f.

<sup>4</sup> *AE.* xxix, p. 146; xxxi, p. 147.

<sup>5</sup> *AE.* xiii (1893), p. 300.

<sup>6</sup> Wosinski, *Das prähist. Schanzwerk.*

The site was occupied at various dates; the Bronze Age folk dug their huts in the löss, thereby destroying all stratification. Objects not in harmony with our general knowledge of the period have accordingly been neglected in the following account. Even the two cemeteries, despite the seeming uni-

formity of the grave goods, may represent two periods.

<sup>7</sup> Wosinski, *TT.*, pp. 70, 189, 197, and 200.

<sup>8</sup> Material in Gymnasium at Bratislava.

<sup>9</sup> *IIA.* ii, p. 339.

<sup>10</sup> *Pravěk.* 1926, p. 29.

<sup>11</sup> Červinka, *MS.*, p. 82; Schránil, pl. viii, 17.

<sup>12</sup> *Real.* ii, p. 62, pl. 25a.

<sup>13</sup> *MPK.* i, p. 140.

<sup>14</sup> *SV.* vi, pp. 33 ff.; *ib.* vii, p. 8.



4. Jordansmühl<sup>1</sup>—large settlement and cemetery on the approach to the Glatz pass.
5. Střešovice,<sup>2</sup> Podbaba,<sup>3</sup> and other sites in the valleys of the Upper Elbe, the Moldau, and the Eger—hut foundations and graves.
6. Rössen<sup>4</sup> near Merseburg on the Saale (cremation graves), Mittelhausen (settlement).

#### *North-western Group.*

Münchshöfen near Straubing—graves.

Asenkofen on the Isar and various caves in Lower Bavaria,<sup>5</sup> with extensions as far as the Federsee Moor to be discussed below.

A link between the north-western and south-western groups is provided by the settlement recently discovered at Niederperwend near Wels<sup>6</sup> (Map III, 47), showing that the Danubian II culture reached Bavaria along the Danube, not from Bohemia.

Stray remains from Salzburg,<sup>7</sup> and those from Carinthia,<sup>8</sup> cannot yet be certainly attached to either group.

The pottery was fired in a closed kiln of beehive form, as the ruins found at Ottitz in Silesia show. The potters' aim was a black ware technically identical with the crusted ware of class A. The surface is always polished and often slipped. *Pottery*

A. Pedestalled bowls (Fig. 48, 2): this is the most characteristic form. The pedestal is always hollow, in Hungary and Bavaria generally high, and especially in Eastern Hungary frequently perforated with large circular apertures. Such vessels were used by preference for sepulchral purposes, and at Lengyel occurred in almost every grave;<sup>9</sup> but though the settlement near Tiszaug has yielded dozens of specimens, none occur in the graves there. Some of the specimens from this site have square pedestals. *Forms*

B. Shallow dishes in which the 'neck' in no case continues the curve of the base; in the north-east group the rim is often inturred (cf. Fig. 40, 2).

<sup>1</sup> *SV.* vii; *AfA.* v, pp. 136 f. An extension of Danubian II into Western Galicia may be inferred from the occurrence there of pedestalled bowls; Kozłowski, *Młodsza*, p. 58, pl. xiv, 11.

<sup>2</sup> Stocký, *Pr. Pr.*, p. 13; *PZČ.*, pp. 77 and 170 f.; Schráníl, *Böhmen*, p. 56.

<sup>3</sup> *Mannus*, iii, pp. 245 f; cf. Stocký, *Chron.*, p. 10.

<sup>4</sup> *Mannus*, xi-xii, pp. 310 ff.

<sup>5</sup> Reinerth, *Chron.*, pp. 89 f.; Bremer, in *Real.* viii, p. 332.

<sup>6</sup> *Nbl. d. Vzt.* iii, p. 86.

<sup>7</sup> Franz, 'Österreich', p. 7.

<sup>8</sup> *Ibid.*, cf. p. 71, above.

<sup>9</sup> Wosinski regards the Lengyel vessels as lamps. He names them 'Totenlampe'.

C. Deep squat bowls; some examples in East Hungary from Tiszadob, Pusztavánháza, Tiszaug, and Bodrogkeresztur have four small wart-like feet (Fig. 49).

D. Biconical urns sometimes with a cylindrical neck (Fig. 49).

E. Big bottles flat on one face and with three rows of small handles on the other (Óbessenyő, Babska, Seloutki) (Fig. 51).

F. Cups with high handles (Lengyel, Bodrogkeresztur, Gocsnód), with analogues in the north-eastern group (Fig. 48, 3).

G. Two-handled mugs (Lengyel, Bodrogkeresztur, Pusztavánháza, Gocsnód<sup>1</sup>) (Fig. 48, 1). A variant on this form is

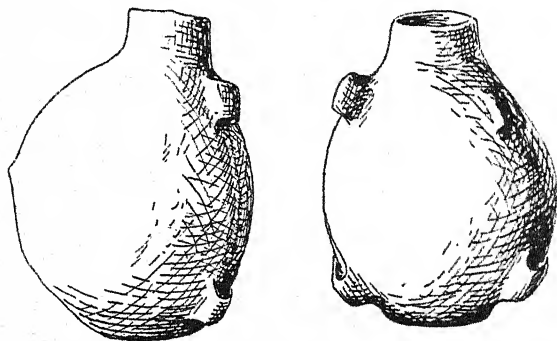


FIG. 51. Flat-faced Butté, Óbessenyő, after AE. 1

characteristic of Jordansmühl (Fig. 52) and similar stations in Moravia.

The Jordansmühl form is preserved, but with only one handle, in Bohemia.<sup>2</sup> Otherwise forms F and G are exceptional.

H. Bottles with long necks and two lug handles near the rim. This type is apparently restricted to the Tisza (Fig. 53a and 55), and may be later.

I. Deep crater-like vessels which, like the dishes of Class B, generally have a distinct neck.

J. From the cemetery near Tiszasás the engineers in charge of the regulation works have rescued a remarkable string-hole vase. The body is globular, with two pierced lugs on the belly. The lid which fits on to the short cylindrical neck is itself cylindrical, with the two string-hole lugs projecting obliquely at the junction of the cylinder with the flat cap.

K. At Óbessenyő a number of very large globular jars<sup>3</sup>

<sup>1</sup> Stocký, *PZČ.*, fig. 50.

<sup>2</sup> Stocký, *BAP.*, pl. xvi.

<sup>3</sup> *AE.* xxxi, pp. 156 f., figs. B-E. The

same types were found at Békésszarvas, *AE.* xxxv (1915), p. 19.



FIG. 48. Lengyel: goblet, tankard and cup. M. Szekszard

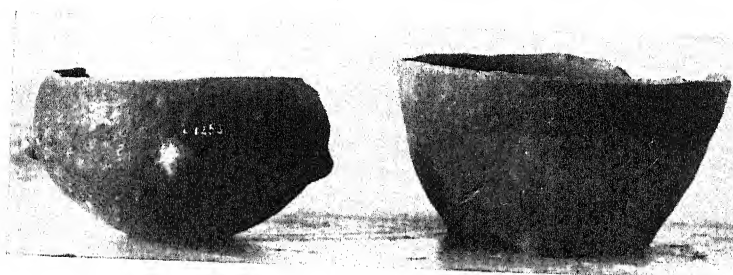


FIG. 49. Tiszadob, bowls. M. Nyiregyháza.  $\frac{1}{4}$

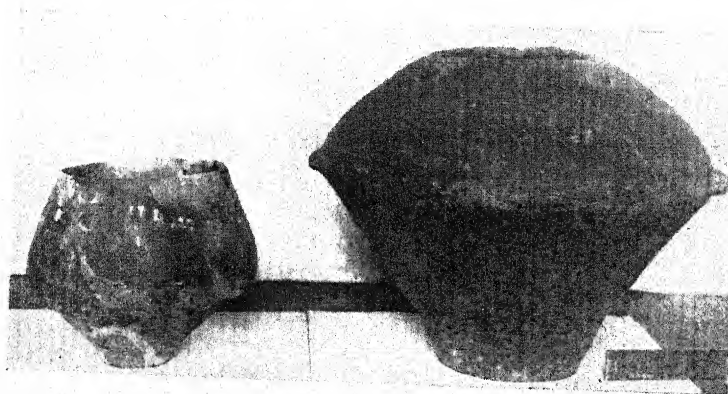


FIG. 50. Lengyel, urns. M. Szekszard



FIG. 52. Jordansmühl, amphora.  $\frac{1}{3}$



*a*



*b*

FIG. 53. Amphorae, Pusztaistvánháza. A. M. N. Muzeum.  $\frac{1}{3}$

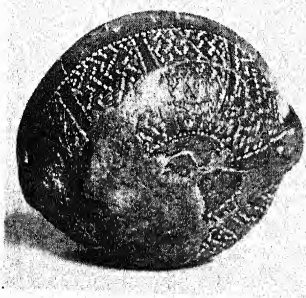


FIG. 54. Pusztaistvánháza, bowl.  
A. M. N. Muzeum

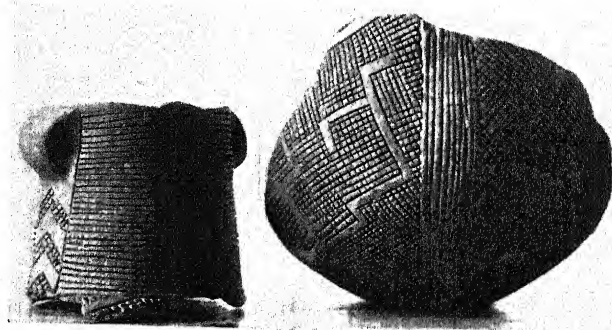


FIG. 55. Danubian II vase in negative Bükk style,  
Tiszadob. M. Nyiregyháza.  $\frac{2}{3}$

with low necks, and often decorated with knobs, were excavated, but their stratigraphical position is not recorded.

Cubical vases and socketed ladles, such as are associated with crusted ware at Polgár and in Moravia (Fig. 40), also occur at Lengyel, in Bohemia, and in Lower Bavaria.<sup>1</sup> At Lengyel curious fillers are common; they may be related to the 'cornets' for paint from the graves of Susa I. Bodrogkeresztur yielded square-mouthed bowls, odd square urns on four feet, and other queer types. Analogues have recently turned up at Tiszaug. To this same period we may assign some of the Bükk ware described on p. 61. Stocký<sup>2</sup> assigns to the same context a curious trough in the shape of a flat-bottomed boat from Veležice in Bohemia.

In general decoration is limited to nipples and bosses like those of crusted ware. The nipples sometimes, as at Bodrogkeresztur and Münchshöfen, develop into large conical warts. In Moravia (Němčice) and Bohemia (Trebušice near Slane)<sup>3</sup> we find regular hollow warts pushed out from the inside. On coarse vases plastic ornament is not uncommon. Ornamen-  
tation

At Lengyel the vases of this group, especially forms A, B, F, and G, were often crusted with running spirals and other patterns in red, white, or yellow as in Polgár ware of Class A. This technique may have been more generally employed; for the colours, not being fixed, may easily have been washed off inadvertently by the excavator.<sup>4</sup>

Incised decoration is only employed in certain areas, and forms local styles. In Eastern Hungary the Pusztastvánháza ware is heavily incised and generally incrustated, sometimes with powdered shell (Figs. 53-4). The combination of deep incision, with sharply edged cylindrical pits, pressed so deeply into the clay that a bulge is observable on the other side of the thick wall, is characteristic of the true domestic ware of the settlement at Tiszaug, but is rare in graves both there and at Pusztastvánháza. One tall bottle of type H has an arcaded moulding round the rim rather in the style of the Moravian 'Nordic' ware.

The Jordansmühl 'amphorae' in Slovakia, Moravia, and Silesia and the corresponding cups of Bohemia are regularly decorated with incised lines and rows of dots forming maeand-

<sup>1</sup> Cf. p. 77 above.

<sup>2</sup> PZČ., pl. LVI, 21.

<sup>3</sup> Stocký, PZČ., pl. LVI, 7; Schráníl, l. c., pl. IX, 12.

<sup>4</sup> Traces have in fact been recorded

from Bohemia (*Mannus*, iii, p. 245), and at Ottitz in Silesia at least one vase was 'painted' with dark stripes (*SV.* vii, p. 8).

droid and other geometrical patterns. This fine incised work really recalls that on crusted ware A in Moravia,<sup>1</sup> and that on Bükk ware farther east.<sup>2</sup> Along the Tisza we have instances of the fine cross-hatched decoration that we term negative Bükk style applied to Danubian II vases (Fig. 55). A sort of shallow fluting, a technique already familiar at Vinča in Period I but appearing in Moravia first in Period III, has been employed for the decorations on some cups of form G, from Pusztastvánháza and Gocsnód.

Finally, in many bowls from Tiszaug a flat projection, rising from the rim to form a handle, exhibits on the outside a plastic reproduction of a nose and pair of eyes. The Münchshöfen pottery of Bavaria is decorated in furrow technique, and the

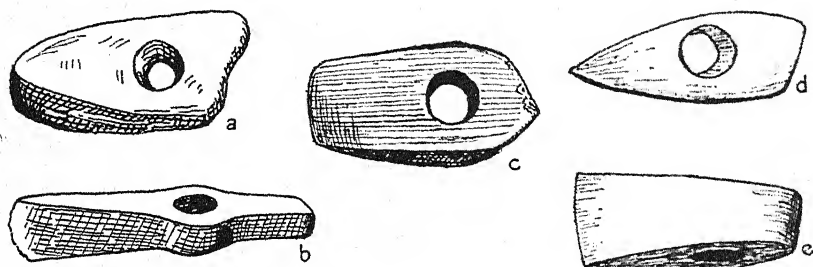


FIG. 56. Stone and copper axes, a, b Lucska, c Jordansmühl, d and e Střelice I (2 views of same).

rim of the vases are regularly 'milled'. The furrowed patterns include hatched triangles so arranged as to leave a reserved zigzag ribbon between them.

Stone  
imple-  
ments

In the settlements of this group, at least in Western Hungary and Silesia, shoe-last celts still occur in profusion. Triangular greenstone celts have been picked up at Lengyel and on Silesian sites as with the crusted ware of Moravia. Perforated axes (Fig. 56a) were met in the graves of Lucska, Kovacshalom, Lengyel, and Obessenyő, and also at Jordansmühl and Ottitz in the settlements. Perforated horn picks and celt-hafts are well attested at this date in Hungary. A chisel made of shell from Lengyel deserves notice. The spheroid mace-head was found at Lengyel. Obsidian was in use all along the Tisza, at Lengyel, and at Babska and also at Ottitz. Large obsidian or flint blades, apparently worn in the hair, were regularly buried with the deceased at Bodrogkeresztur and Pusztastvánháza.

Obsidian

Copper

Copper is by no means rare in graves of this group. Beads

<sup>1</sup> Cf. esp. Stocký, *Pr. Pr.*, pl. 1, 7.

<sup>2</sup> Cf. *IIA*. ii, p. 340.



of that metal were worn at Bodrogkeresztur, Pusztastvánháza, Lengyel, and Jordansmühl. The last two sites yielded spectacle-spirals of copper wire. The Jordansmühl graves were very rich in such trinkets.<sup>1</sup> Wire rings were worn on the fingers and toes, and bracelets; some, terminating in spirals, encircled the arms (Fig. 57). Along the Tisza copper was already used for implements. We have a copper axe-hammer, shaped like the perforated stone axes from Lucska (Fig. 56b), a knife or dagger without rivets or midrib from Bodrogkeresztur, and an awl from Pusztastvánháza.<sup>2</sup> Very probably a copper axe, similar to that from Lucska, picked up near the Jordansmühl settlement,

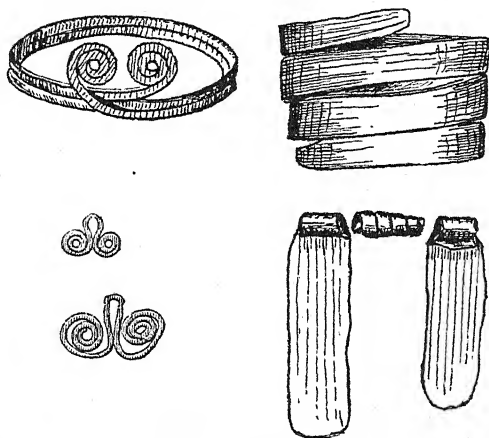


FIG. 57 Copper trinkets, Jordansmühl, after Seger.  $\frac{1}{2}$

belongs to this same period. The implements from Tordos and Csóka should also be remembered.

The use of gold is attested by the discovery of hollow cones of gold leaf in three graves at Bodrogkeresztur. Parallel to the edges runs a border of bossed points. *Gold*

In addition to metal trinkets, small disk-shaped beads of marble (like Fig. 66, 31) were strung together and worn on the arms and legs or as girdles by the women buried in the cemeteries on the Tisza. Marble beads, and fossil *Dentalium* shells were also found at Lengyel as well as bored teeth. Conical buttons with V-perforation seem to have been manufactured *Marble* *Imported shells*

<sup>1</sup> One analysis gave from 2.7 per cent. to 3.4 per cent. tin; but subsequent experiments revealed no tin, only 0.78 per cent. antimony and traces of lead, bismuth, and arsenic. *AfA.* v, p. 125.

<sup>2</sup> *Különlenyomat* 1923-6, p. 30, figs. 5, 6, 7, and 14.

<sup>3</sup> Perhaps, however, recent shells imported from the Red Sea (Wosinski, *Lengyel*, p. 27).

at this period at Lengyel.<sup>1</sup> From the Lengyel graves came further *bullae* made from *Tridacna* shells imported from the Indian Ocean, as well as mother-of-pearl disks. *Tridacna* shell disks were also found in grave 2 at Kovacshalom.<sup>2</sup>

*Weaving* Spindle-whorls occur at Lengyel and Jordansmühl. A stamp or *pintadera* was found at Bubenec near Prague.

*Figurines* Figurines are never encountered in the graves, and are exceedingly rare in settlements. There are, however, several fragments from Ottitz in Silesia, the leg of a sitting figure from Lengyel, a fragmentary foot from Rössen on the Saale, and one or two stray pieces from Bohemia<sup>3</sup> and Saxo-Thuringia<sup>4</sup> that may belong here.

*Villages:* The settlements are not very well known. The hill, termed  
*Fortification* Lengyel, was surrounded with a flat-bottomed moat, 2 m. wide, which agrees in section with the moats defending neolithic hill-settlements in South-West Germany.<sup>5</sup> Otherwise there are no grounds for assigning the earthwork to the Stone Age rather than the Bronze Age, to which Wosinsky thought it belonged, or even the La Tène period. It is, however, obvious, from the extent of the cemeteries, that the Danubian II people lived in regular villages.

*Houses* The houses within the settlement of Lengyel were apparently not excavated in the soil. Rectangular houses containing Jordansmühl pottery<sup>6</sup> have been recognized in Moravia. Elsewhere, however, pit-dwellings have been reported (Silesia, Bohemia, and Moravia). The huts at Szarvas were round, formed by a ring of upright sapplings tied together at the top and covered with wattle and daub. Both at Lengyel and Ottitz the outer walls of the fire-places were plastered with painted clay. From Kovacshalom comes a horn-shaped fire-dog like those common in the Late Bronze Age of the Upper Danube and Rhine.<sup>7</sup>

*Fire-dogs*

*Graves* We are better informed as to the dwellings of the dead. Save in Bohemia and Saxo-Thuringia, the departed were regularly interred in trench graves often dug close to the huts. The corpse was always laid to rest with the legs flexed, and sometimes in a strictly contracted attitude, lying generally on

<sup>1</sup> The well-known marble rings from Rössen are assigned to this period by Niklassen, but Červinka points out that similar ornaments are found in true Rössen graves in NW. Bohemia (*Real.* ii, p. 63).

<sup>2</sup> *AE.* xxxiii, p. 131.

<sup>3</sup> Stocký, *PZČ.*, p. 80.

<sup>4</sup> *ŽST.* xii, pp. 74 f.

<sup>5</sup> *PZ.* ii, p. 15.

<sup>6</sup> *Real.* ii, p. 60 (Pavlovice near Prešov).

<sup>7</sup> *AE.* xxxiii, p. 128, fig. 7.

the left, sometimes on the right side. Double and even multiple interments (man, woman, and child) in the same grave have been recorded on the Tisza (Bodrogkeresztur, Pusztastvánháza, and at Lengyel). Red ochre was placed by the corpses at Lengyel, Kovacshalom, and Óbessenyő. In contrast to the almost universal practice of inhumation stand cases of cremation reported from Lucska, Prague-Bubenice, and Rössen on the Saale. At Pusztastvánháza Dr. Hillebrandt found richly furnished graves containing no skeleton; in other cases the feet had been amputated, a phenomena also noted at Lengyel. Headless corpses were also found by Hillebrandt at Bodrogkeresztur.<sup>1</sup>

At Lengyel and Bodrogkeresztur the skeletons belonged to tall, powerfully built individuals with definitely long heads. The Jordansmühl folk were slighter and less dolichocephalic.<sup>2</sup> Scheidt<sup>3</sup> assigns one Lengyel skull to his 'Chamblandes type', and the Jordansmühl crania to the East German long-headed group. One child's skull from Lengyel is said to have been trepanned.<sup>4</sup> An old man buried at Szarvas was markedly brachycephalic; a woman from the same cemetery was mesaticephalic.<sup>5</sup>

Ceremonial burial was not reserved for human beings. At Jordansmühl the complete skeleton of a young *Bos primigenius* was interred in a long trench. Under it lay five dogs' skulls and near by the skull of an infant.

The animal remains from Lengyel<sup>6</sup> and Jordansmühl<sup>7</sup> have been carefully studied. Assuming that those from the former site belong to the 'neolithic' period, the results are as follows:

Cattle—*Bos brachyceros*.<sup>6,7</sup>

*Bos primigenius* (domesticated).<sup>6,7,8</sup>

Swine—*Sus palustris*.<sup>6,7</sup>

Sheep—*Ovis aries palustris*.<sup>6,7</sup>

Dogs—*Canis palustris*.<sup>7</sup>

*Canis intermedius*.<sup>7</sup>

Horse bones are reported from Lengyel and Óbessenyő; but it is uncertain whether the animal was domesticated, while the stratigraphical position of the remains is unknown.

<sup>1</sup> *AE.* xli, p. 279.

<sup>2</sup> *AfA.* vii, p. 232; indices 69.9-78.6; stature 1.45-1.63 m.

<sup>3</sup> *Op. cit.*, p. 70.

<sup>4</sup> Wosinski, *Lengyel*, p. 63.

<sup>5</sup> *AE.* xxxv, p. 14.

<sup>6</sup> Wosinski, *Lengyel*, iii, p. 282. A.

<sup>7</sup> *AfA.* v, l. c.

<sup>8</sup> According to Keller (*AfA.*, l. c.). The domestication is denied by Holdfleiss, *Verh. Gesell. D. Naturforscher u. Ärzte*, Breslau, 1904, pp. 269 f.

*Grains* At Lengyel the usual Danubian wheat, *Triticum monococcum*, was cultivated as well as *Triticum vulgare*, *Triticum sativum*, *Hordeum hexastichon*,<sup>1</sup> *Panicum milliactum* (millet), and *Faba vulgaris*. Whether the grains, said to be derived from straw-lined silos,<sup>2</sup> actually belonged to the Danubian II epoch is uncertain.

#### IV. PERIOD II AS A WHOLE

*Chronology* The relative chronological position of the Vinča, Polgár, and Lengyel-Jordansmühl cultures is given by the following facts. The position of Vinča II is fixed stratigraphically. An approximate synchronism between Vinča II and the Polgár A culture in Moravia may be inferred from the agreement in the pottery (crusted ware) and types of figurine (sitting types, modelling of the head), and the common use of obsidian, though we believe that these traits appear earlier on the Upper Tisza than at Vinča. The Moravian groups are in turn delimited above by the Danubian I b sherds associated with the oldest (group A), and below by the anticipations of the 'Nordic' culture, belonging to Period III, in group C. Polgár itself is perhaps similarly limited below by the appearance of the *ansa lunata*.

That the Jordansmühl culture occupies approximately the same position between Periods I and III is also clear when it is recalled that Danubian I culture lasted longer in Silesia than farther south. At the type station 2 hut foundations contained only Danubian I ware, and 12 Danubian I and Jordansmühl ware. The latter was found pure in 39 huts and, mixed with Danordic ware, in 5. In the cemetery 49 graves yielded Jordansmühl pottery alone; in 2 it was mixed with Danordic ware.

The appearance of the *ansa lunata* at Lucska and Tiszadob, and of fluted ware at other sites might suggest a corresponding limit for the Tisza cemeteries since these devices are characteristic of Period III in Moravia. As a matter of fact we shall see that these cemeteries really last well into Period III. Dr. Hillebrandt<sup>3</sup> has indeed proposed to divide them up between three phases distinguished by the extent to which copper was used. His scheme is (1) Lengyel-Polgár (copper used only for ornaments), (2) Pusztastvánháza-Bodrogkeresztur (copper knives and awls), (3) Lucska (bored copper axes). Though

<sup>1</sup> A small variety identical with that found at Troy, cf. *PZ.* xiii (1921-2), p. 172. <sup>2</sup> Wosinski, *op. cit.* iii, p. 18. <sup>3</sup> *AE.* xli (1927), p. 57.

some such division is necessary, Hillebrandt's scheme fails to take into account local divergences; Lengyel in particular is not as a whole so old. Stratigraphy, not typology, must form the basis of any valid division. In Bavaria the Münchshöfen pottery is sometimes associated with Danubian I wares (Rössen and Hinkelstein), but once at least overlies Rössen<sup>1</sup> pottery.

The internal subdivision of the period thus defined is less easy. It may be assumed that Polgár A slightly antedates the beginning of Vinča II. But how is it related to the two cultures juxtaposed to it in Tiszadob and Jordansmühl respectively? Dr. Cervinka seems inclined to regard the Jordansmühl group in Moravia as 'crusted ware without the crusting', i.e. a fourth phase of the Polgár culture. But since its lower limits are the same as those of the latter, this view must be abandoned. Jordansmühl should rather be regarded as parallel at least to the later phases of crusted ware in Moravia. The Lengyel material is so closely allied to the earliest Moravian that a partial synchronism seems certain; common to both groups are the technique of ornamentation, the socketed ladle, the perforated cube, greenstone-celts, &c. In that case the beginning of the Tisza cemeteries could not be much later. At the same time there are close agreements between Lengyel and phase B of the Polgár group. We might therefore place the beginning of the culture at Lengyel and on the Middle Tisza in phase A and synchronize its northward expansion with phases B and C. But on the Middle Danube, as we shall see, there is little material at present to occupy Period III despite the *lunata* sherds, so that a longer duration of Danubian II culture in this area might be postulated. That is only to be expected in view of the enormous number and great size of the settlements and cemeteries there.

In Danubian II points of contact with the Aegean become very abundant, and can in some cases only be explained by direct intercourse between the two areas. Actual Aegean manufactures have not, indeed, been detected, but foreign substances of southern provenance establish beyond question the existence of traffic along the Danube. The most conclusive instance is provided by the Mediterranean shells found with crusted pottery at Weikersdorf in Lower Austria and the *Tridacna* ornaments from Lengyel and Kovacshalom. A fragment of ivory from Babska in Slavonia would be equally conclusive were its stratigraphical position secure. The 'marble'

*Subdivisions.*

*Jordansmühl and Polgár*

*Aegean connexions*

*Imports of shells*

<sup>1</sup> *Mannus*, xv, p. 215; *Germania*, vi, p. 45

beads from Pusztáistvánháza and from Moravia cannot be claimed as Aegean imports without petrographical examination; the material more probably came from the Bihar massif.

*Mace-heads* The spheroid mace is an old Asiatic and Aegean type that presumably came up the Danube at this epoch.

*Metal axes and knives* None of the metal tools or weapons are demonstrably imports from abroad, and even the metal may have been won locally, though the knowledge of metallurgy must have been learned from the south-east. Indeed both the rivetless knives from the Tisza cemeteries and the bored hammer-axe from Lucska stand so close to stone forms that they might well be local products. Still, the axe is closely allied to the primitive axe-adzes from Tordos. These have parallels in Crete in Early Minoan II times<sup>1</sup> that might illustrate the origin of the type. On the other hand, there are better prototypes farther east, and we shall see that there is other evidence about this time for a current of influence across the steppes from the Caucasian region.

*Metal vases copied in clay* But if tools and weapons are inconclusive, the copper spectacle spirals from Jordansmühl and Lengyel copy a familiar Trojan type. It is equally clear that exceptional ceramic forms imitate metal prototypes that were current at Troy. The two-handled tankards are obviously metallic as are the cups with high handles. One of the metal originals of the former type was found in the Treasure of Priam. The isolated string-hole pyxis from the cemetery near Tiszasás is again a pure Aegean type, to which the same Treasure offers metal parallels.<sup>2</sup> But the shape was much older; at Troy it goes back to the First City, and an exact parallel to our specimen comes from an E.M. II deposit in Crete.<sup>3</sup>

*Aegean pot-forms* Other elements in Danubian II pottery are likewise to be derived from the Aegean area. The high-footed bowl is an old Aegean form that begins in Crete in pre-Minoan times. The most precise parallel is a fragment from Hissarlik, with a perforated pedestal, as on the Tisza, that is assigned to Troy I.<sup>4</sup> The variant with human feet that we find at Csóka, Vinča, and Tordos is also found in Asia Minor at Yortan.<sup>5</sup> Again, the four-footed libation tables like Fig. 36 seem to have parallels in the *F* 3 ware of Thessaly.<sup>6</sup> And in a Danubian II context

<sup>1</sup> Evans, *Palace*, p. 194, n. 3.

<sup>2</sup> *SS.*, no. 5859.

<sup>3</sup> Evans, *Palace*, fig. 24.

<sup>4</sup> Schliemann, *Ilios*, fig. 50; cf. Evans,

*op. cit.*, fig. 17.

<sup>5</sup> Forsdyke, *Catalogue BM.*, p. 10, fig. 16.

<sup>6</sup> Wace and Thompson, p. 111.



appear in Moravia one or two sherds that might really have been manufactured in Thessaly during the first period. Most striking of all are the clay cubes with their hollowed bowls that so patently copy early Minoan stone vessels, preserving even the perforations at the corners.<sup>1</sup>

The spread and multiplication of figurines in Period II may in itself betoken intensified intercourse with the south-east. The aprons, the steatopygy, and the position of the hands are all ancient East Mediterranean elements. The *kourotrophos* type that now appears for the first time must in any case have come up from that quarter; she was being modelled in Central Greece during the first neolithic period.<sup>2</sup> So too the clay stamps or *pintaderas* that are associated with Jordansmühl pottery in Bohemia and with the latest crusted ware in Moravia came up-stream; for they have exact parallels in Thessaly I, and Troy II and farther East.<sup>3</sup>

But if all these elements were supplied by the Aegean, the relations between that area and the Danube basin were by this period bilateral. The crusted ware that invades Thessaly at the beginning of the third period there is identical with that of Polgár and Lengyel, but reaches Thessaly from the north and not vice versa. So, too, the bored stone celts that are first found in Thessaly at that time are most likely derived from the Danube area. Hence at least by the third Thessalian period Danubian elements were filtering across the Balkans into North Greece. That was indeed only to be expected, since we have already noted how the Danubian province was extending its frontiers up the Morava at the beginning of Period II.

However, we have observed indications of direct contact with North Greece during the first Thessalian period. Now, at the close of that epoch, Frankfort finds a number of intrusive elements appearing in Macedonia and Central Greece that he terms 'Danubian' and takes as evidence of a great invasion from beyond the Balkans.<sup>4</sup> Some of Frankfort's intrusive elements we regard just as survivals of the aboriginal complex common to Greece, Anatolia, and the Danube basin. Carboniferous wares, as our author himself admits,<sup>5</sup> formed an original

Figurines

Clay stamps

Danubian  
II elements in  
Greece  
Crusted  
ware  
Bored  
celtsRelations  
with  
Thessaly I

<sup>1</sup> Xanthudides, pl. x.

<sup>2</sup> Chaeronea, 'Εφ. 'Αρχ., 1908, pp. 63 f., pl. Ar.

<sup>3</sup> Tsountas, 4-Σ, fig. 272; Schliemann, *Ilios*, fig. 496; Childe, *Most Ancient East*, fig. 63. The filled cross on all these recurs in our area. The

Egyptian button seals that belong to the age of the VIth and later dynasties are members of the same family; cf. Evans, *Palace*, i, p. 112.

<sup>4</sup> *Studies*, ii, pp. 42-50.

<sup>5</sup> *Op. cit.*, pp. 14 and 60.

substratum on the west side of the Aegean as on the east, and we should prefer to treat the burnish-decorated and ribbed wares in the same category. Other of his elements are not Danubian at all in our sense of the word; white painted ware is not found on the Middle Danube, but seems to be at home in Anatolia. The raking and similar handles again are not native in any true Danubian sites; they belong to the cave culture of which we have traces all along the Mediterranean coasts from Sardinia, Italy, Istria, and Crete<sup>1</sup> to Macedonia and even Cyprus, and only begin to trickle into the Danube basin in the Bronze Age.

*Danubians in Central Greece* Still there may well have been a re-enforcement of the older aboriginal stocks from beyond the Balkans in Central Greece and even Corinthia. Some elements there, notably the 'legs' from Drakhmani,<sup>2</sup> and perhaps also the beaded ware from Phocis and Boeotia, might have been inspired by such a re-enforcement. It is much more doubtful whether we should

*Cyclades* allow this northern element to extend to the Cyclades. As evidence of its presence, Frankfort<sup>3</sup> cites the horned, raking, and other handles that have just been discussed, decoration by means of impressed triangles, 'fretwork' ornament, and the spiral. The first of these elements has already been dismissed; fretwork is a style of decoration taken over from the wood-carver<sup>4</sup> that certainly appears occasionally in the Danube basin, but, as far as can be judged, first in Period III. The spiral needs

*Spirals* more careful consideration. It was certainly a motif that took root as an element of ceramic decoration more firmly in the Danubian region than anywhere else, and the agreements between the Cycladic versions of it and those from Butmir and Transylvania cited by Frankfort are perfect.<sup>5</sup> In view of

*Synchronism between Butmir and E.C. III.* the non-ceramic material in which similar patterns are often elaborated<sup>6</sup> it would be rash to dogmatize on this point; it may be that these Cycladic spirals have been suggested by Danubian models, but Babylonian influence transmitted through Troy is far more likely.<sup>7</sup>

In any case we may very well admit that the Vinča culture,

<sup>1</sup> For Cretan handles see Evans, *Palace*, fig. 7, 3.

<sup>2</sup> Frankfort, *l. c.*, pl. iv, 7.

<sup>3</sup> pp. 49-50.

<sup>4</sup> The influence of wood-work was always pronounced even on the oldest Cycladic ware; vide, Forsdyke, *Catalogue BM.*, p. xxix, cf. A 311-15.

<sup>5</sup> Pls. vi, 1-3 and ii, 11-16.

<sup>6</sup> Cf. p. 74 above. Note too that recent

finds from Mallia (Evans, *Palace*, ii, fig. 164) and Byblos (*Syria*, iii, p. 285, fig. 5, 11) reveal the spiral flourishing in Middle Minoan stone- and metal-work when it was scarcely used on pottery.

<sup>7</sup> Cf. p. 51 above and *Antiquity*, ii, p. . . On 'fretwork' see Hall, *Aegean in Bronze Age*, p. 60.

that had spread up the Morava to Gradac by the beginning of Period II, actually overflowed the Balkan barrier early in that period, sending out colonists to Macedonia and Central Greece. We have already hinted that the Vinča folk were by that time being subjected to a pressure from the north, a pressure whose continuation introduced crusted ware both to Vinča II and Thessaly III.

The Aegean connexions traced above allow of an approximate dating of the second period in the Danube valley. In the Polgár complex we have connexions with Thessaly I in the sherds from Raigern and Střelice II, and in the clay stamps that recur at Sesklo. So in Lengyel and Jordansmühl we find forms derived from models belonging to Troy I and also to Troy II. Conversely, we have late Vinča I elements (belonging in time very possibly to Period II) appearing in Greece at the end of the first Thessalian period and exact parallels to Butmir designs in an E.M. III context on the Cyclades.<sup>1</sup> Finally, crusted ware from Vinča II, that is to be equated with an advanced stage of Danubian II, appears in Thessaly in the third period when 'Urfirnis ware' was still current. Hence Danubian II must have begun about 2,500 B.C. or even earlier, and lasted down to the last-named date, about 2,100 B.C.

*Absolute  
dates*

Vinča II was, as we saw, in the main a continuation of the older culture, but we had to admit pressure on it from other groups that we have designated Polgár and Lengyel. The rise of these and their interrelations must next be discussed briefly.

*Summary:  
Vinča I*

In the Polgár culture the basis of life is agriculture combined with stock breeding and some hunting and fishing. Trade is not sufficiently developed to maintain a regular supply of raw materials such as obsidian.

*Summary:  
Polgár*

War is not prominent, and the settlements are apparently small.

The main object of worship is the Danubian 'mother goddess'. The dead are either cremated, the ashes being interred in the village with only symbolic offerings, or buried in the contracted position. Perhaps the whole series of model animals, chairs, and houses were made for funerary use. The art shows a keen sense of colour, hampered by imperfect means of expression in pottery. Save in the west,<sup>2</sup> the spiral is used only as a secondary element and usually in an exceedingly degraded form.

<sup>1</sup> For the date see Forsdyke, p. xxix.

<sup>2</sup> Jenny (*MAGW* lviii, p. 70) takes all his examples from Lengyel.

The potter has gained complete mastery over his material and uses an oven. Weaving and the bow are, on the other hand, perhaps only acquired during the period.

As tools, besides the shoe-last celt, triangular 'pebble' axe-heads, horn axes, and flint or obsidian knives are used. Specialized weapons are absent. The pottery shows a variety of truly ceramic forms including theriomorphs though lacking genuine handles. Ladles with bored handles are characteristic.

Imported sea shells are used as ornaments.

Substantial rectangular houses with gabled roofs coexist with 'pit-dwellings'.

*Lengyel* At Lengyel and Jordansmühl we find other traits.

Trade plays a real part in the communal economy, in addition to the avocations attested for Polgár. The settlements are concentrated in a very conspicuous way at the junction of trade routes, and the extensions up the Körös and to Salzburg suggest a search for gold and copper.

Some men at least are warriors. The people live together in comparatively large villages and perhaps fortify them. The graves containing a man and a woman, or a man, a woman, and a child, show that monogamy prevailed. The position of women was high as the wealth of women's graves testifies.

The sway of the mother goddess is waning. But the dead are treated with great respect, and buried ritually with an abundance of vases, weapons, and ornaments.

Art finds little expression in ceramic decoration, but a taste for colour is still attested in the interior of the houses. The spiral motive is accidental, but, when used, preserves a good running form, worthy of Butmir.

Weaving is attested by whorls and spools. Perhaps on the Tisza copper is worked locally.

With the addition of copper awls the tools are the same as at Polgár; but there are specialized weapons—spheroid mace-heads, perforated stone and even copper axes, and, on the Tisza, copper daggers, these being perhaps secondary accretions.

Copper trinkets of Aegean form, gold buttons, and the teeth of game (deer) are worn as ornaments in addition to shells.

The architecture agrees with that of the Polgár complex. So, too, do the ceramic forms, save that the pedestalled bowl is universal and true handles are coming into general use.

Thus, despite the very large measure of formal agreement, the inner characters of the two groups are in contrast. At the same time, notwithstanding a patently Danubian I substratum,

both cultures seem more than Danubian I enriched by trade borrowings.

The Lengyel complex has a distinctly 'aristocratic' aspect, and we remember that it appeared as an overlord culture among the Danubian I peasants of Bohemia and Silesia. One might be tempted to identify the new aristocracy with the Anatolian prospectors and traders whose activities on Danubian waters are so conspicuously reflected in many imitations of Troadic objects. At the same time an infiltration of nomad Nordics from the steppes farther east might afford a better explanation of the tall long-headed skeletons, the axes, used apparently as weapons, and the red ochre in the graves. And in any case the survival of Danubian elements must not be under-estimated; even the axes might be nothing more than improvements of the bored celts of Period I.

In the Polgár culture the Danubian traits are more pronounced, yet even here borrowings from the new 'aristocracy' are undeniable. Both groups may then be regarded as due to a fusion between the Bükk culture and some new ethnic elements. This fusion took place in North-Eastern Hungary, whence the new compounds spread northward, westward, and southward.

In Vinča II we see the results of their southward advance, but we believe that Vinča I overlapped with the earliest phases of Polgár and Lucska. The expansion of Vinča I up the Bosna and the Morava and even into Thessaly, might have been actuated by the pressure of the steppe element that was, on one hypothesis, absorbed in Lengyel, and would in any case have opened up channels whence the knowledge of painting could reach the löss lands. Then towards the end of the period there was a regular overflow of Vinča II elements into Thessaly, bringing thither crusted ware and bored celts. For some time hereafter Thessaly, Macedonia, and the South Danubian region form one continuous province where culture developed on strictly parallel lines during Periods III and IV and possibly still in Period V.

## VI

### PAINTED POTTERY

**T**HOUGH the Danube was the main highway by which culture might reach Central Europe, cross-currents from the Ancient East following a more northerly route were always possible. Rather problematic evidence of such is in fact at hand.

*Erösd* On the extreme eastern border of Transylvania in the Upper Alt valley, twenty-six settlements of a distinctly advanced population have come to light.<sup>1</sup> The settlements all lie high on the löss terraces in naturally defensible positions (Map III, A-D). The material from all sites is remarkably uniform, but Erösd is the only one thoroughly explored, and is, therefore, adapted to serve as the type station.<sup>2</sup> The prehistoric village

*Village* is perched upon a löss spur that rises steeply some 180 feet above the plain of the Alt. The site is protected on either side by deep ravines carved in the friable soil. A ditch had been dug across the neck that alone connected the settlement with the plateau. The area cut off by this moat is approximately 5,000 m<sup>2</sup>. Within this space a strip on the north about 8 m. wide and 60 m. long has been excavated down to virgin soil, which was encountered at a depth of 4 m. Two layers of brick-red, burnt clay, separated by 1.30 m. of black deposit and capped or underlain by similar dark strata, evidently represent two distinct structural epochs in the history of the village. It is, however, stated<sup>3</sup> that the same pottery was found both above and below the lower clay layer and even in the black earth above the upper band; first in the 'yellow subsoil' did remains of coarse fabrics of later character come to light.

*Erösd I* In virgin soil one or two shallow oval pits had been excavated, the largest being about 2 x 1 m. across. There were further  
*'Pit-dwellings'* deep bottle-necked excavations, none more than 1½ metres in diameter at the base. Such pits were found to be full of ashes and kitchen refuse. Whether any of these holes in the ground really represented the first dwellings of the artists who produced the magnificent pottery, characterizing the site, seems open to doubt: I personally regard them as silos. Hearths on

<sup>1</sup> Teutsch, *MPK*. i, pp. 365 ff.; László, *Dolgozatok*, ii (1911), pp. 175-260.

<sup>2</sup> László, *Dolgozatok*, 1914, pp. 280-417, dealing with architectural re-

mains only. For Priesterhügel see Teutsch, *l. c.*

<sup>3</sup> László, *Dacia*, i, p. 26.



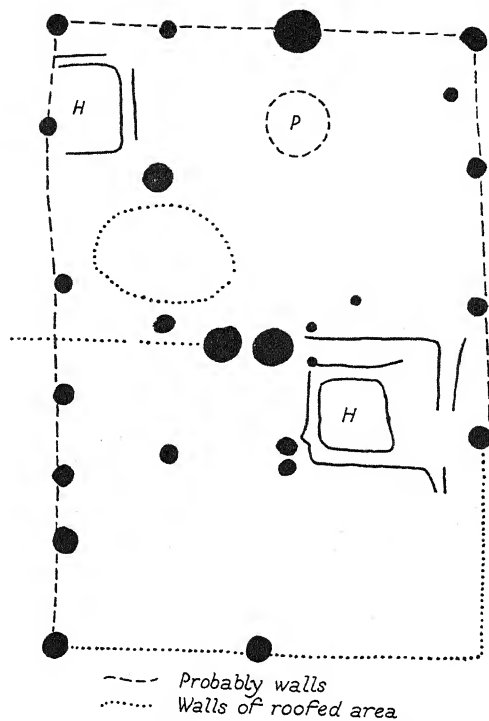


FIG. 58. Plan of megaron at Erösd

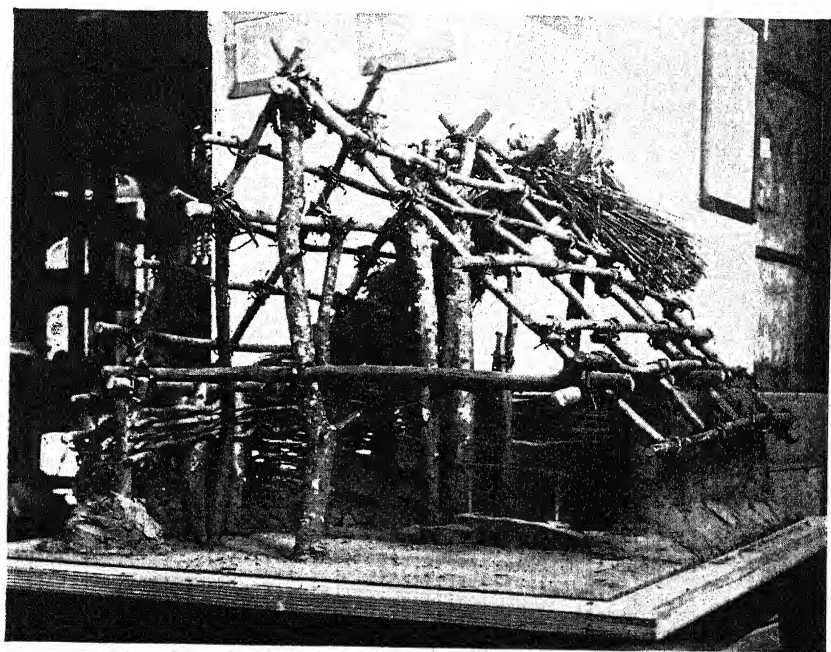


FIG. 59. Reconstruction of megaron at Erösd

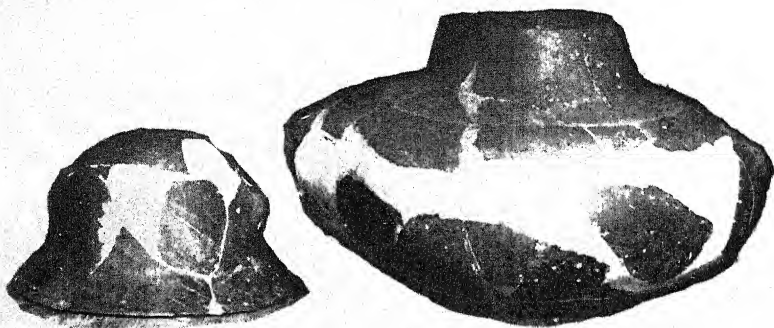


FIG. 60. Vases from Erösd, Szekler National Museum



FIG. 61. Vases from Erösd.  $\frac{1}{6}$

the level of virgin soil have also been discovered. It looks as if the original settlement had already been protected by a double line of earthworks separated by a wide moat and reinforced by stakes at the top of the sloping bank on the north. *Defences*

After about a metre of black earth, representing debris of occupation, had accumulated, a large section of the village was rebuilt, the black earth having been partially levelled. The remains of the new houses are well preserved. They lie 'in' (and just under) the lower stratum of burnt clay that consists of their ruined floors, walls, and roofs. *Erösd II*

These houses are all rectangular in outline and were divided into two rooms. The compartment on the north constituted a sort of entrance porch, open in front and probably also on the west side (Figs. 58, 59). The floor of the inner room behind was about 9 inches higher than that of the porch. The floors consisted of stamped clay resting upon the black earth. The walls were of wicker-work, plastered with mud and supported by vertical posts. The roof was probably gabled; three particularly stout wooden posts in the centres of the front, partition, and rear walls respectively must have supported the ridge-piece.<sup>1</sup> The roofed areas were, in one house,  $8.15 \times 5.5 \text{ m}^2$ , and in another  $6.6 \times 6.4 \text{ m}^2$ . Hearths of stone and clay were built both in the porch and in the inner room. The hearths and the walls were plastered with clay, the surface being subsequently painted. A house at a higher level had been decorated with an elaborate moulding of painted mud-plaster that presumably stood over the inner doorway. The houses of the lower burnt stratum were arranged in rows. Seven have so far been uncovered along the north side of the village. There is room in the unexplored section for two similar rows, so that the whole settlement may have comprised twenty-one households. *Houses*

In the upper levels hearths, similar to those already described, were encountered, but the exact outline of the houses to which they belonged could not be determined.

The pottery of the Alt stations is uniformly good. The normal surface colour is a brick or orange red, but the body in thicker pieces is occasionally greyish<sup>2</sup> and even the surface is sometimes black or even mottled. Nearly all Erösd vases seem to have been ornamented with painted patterns which are sometimes combined with moulded decorations. A regular *Pottery: fabric*

<sup>1</sup> Just the same sort of house is being built by Transylvanian peasants to-day. Cf. Tzigara-Samuras, *L'Art du Peuple Roumain*, p. 11.

<sup>2</sup> László, 1911, p. 240.

closed oven was used for their manufacture; Dr. László found the ruins of such an oven full of vases. This, together with a clay model, discloses a sort of beehive structure.<sup>1</sup>

*Ornamen-  
tation* The main styles of painting are as follows: (a) white on the natural red (or black<sup>2</sup>) surface; (b) white outlined with black on the red surface, natural or washed, the pattern in this case being reserved; or (c) (rare) red outlined with black on a pale buff slip. Then a sort of corrugated decoration (d) was also used. The designs consist of broad shallow flutings, the raised surfaces being often painted white. The concave surfaces are highly polished, and when they meet form a sharp angular ridge (Fig. 62). The designs are based on the horizontal S-spiral and maeander, and are at first strewn about the surface regardless of the form of the pot; in typologically later vases, according to Dr. Frankfort,<sup>3</sup> a tectonic arrangement comes into play, the patterns being accommodated to the shape. In some cases the patterns are so sharp and the figures recur with such uniformity that the use of some sort of stencil must be admitted. The painted patterns are sometimes supplemented by low round bosses.

*Forms* The shapes<sup>4</sup> of the Erösd pots are still but little removed from the primitive. The distinction of several parts of the vase is scarcely accentuated. More than two-thirds of the vases have the inverted truncated cone for their structural basis; only a minority go back to hemispherical types.<sup>5</sup> Though pedestals and string-hole lugs are common, no genuine handles occur. Short tubular spouts,<sup>6</sup> opening just below the rim, have, however, been found at Erösd and some other sites, but very rarely.

The most distinctive forms are: (a) conical dishes (or lids), sometimes with incurved brims;<sup>7</sup> (b) string-hole lids like Fig. 60, 1; (c) hollow tubular supports (Fig. 61, 1); (d) pedestalled bowls in which the dish has coalesced with the support Fig. 61, 2; (e) biconical beakers with a very narrow base or on a low stand-ring;<sup>8</sup> (f) open craters (Fig. 62); (g) urns with short

<sup>1</sup> Childe, *Dawn*, fig. 67. The same type of oven is used by the local peasantry to-day.

<sup>2</sup> Frankfort, *Studies*, ii, p. 29 and n. 1, describes a class of pots painted, with thin white lines, best represented in Erösd II b, to South Danubian influence, without adducing any evidence for this attribution.

<sup>3</sup> *Op. cit.*, pp. 19 and 21. The pots cited as evidence in n. 4 are not datable.

<sup>4</sup> Studied in detail by Dr. László in *Dacia*, i (1924), pp. 1-27.

<sup>5</sup> *Ibid.*, p. 23.

<sup>6</sup> László, 1924, pl. XIII, 1-3.

<sup>7</sup> *Ibid.*, pl. 1; 1911, figs. 11-14.

<sup>8</sup> László, 1911, fig. 23.



FIG. 62. Vase from Erösd.  $\frac{1}{4}$

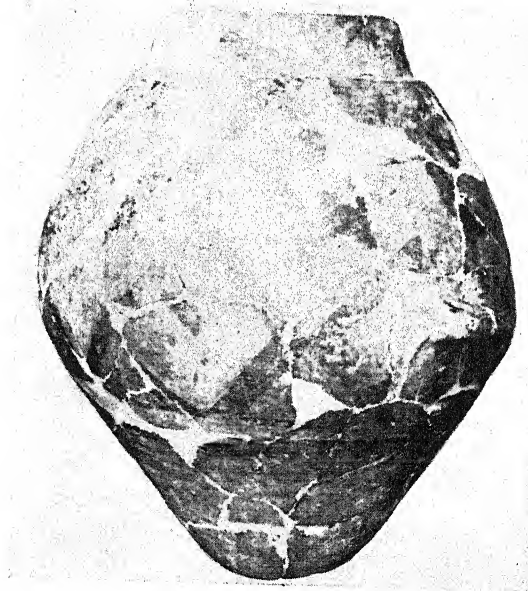


FIG. 63. Vase from Erösd.  $\frac{1}{4}$

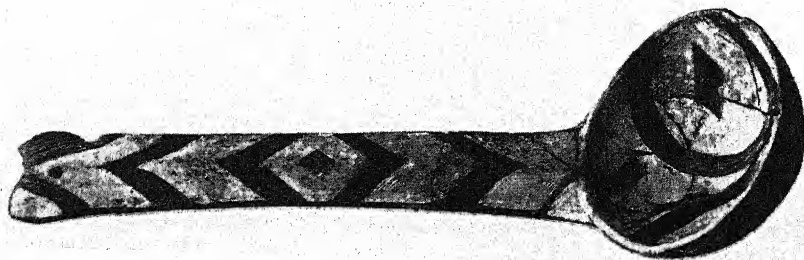


FIG. 64. Ladle, Erösd, after Teutsch.  $\frac{1}{3}$





necks (Fig. 60); (*h*) 'amphorae' with string-hole handles (Fig. 63); (*i*) large ovoid pithoi;<sup>1</sup> (*j*) theriomorphs;<sup>2</sup> (*k*) rectangular vases;<sup>3</sup> and (*l*) ladles generally with very long handles (Fig. 64). Miniature vases of all shapes are common. Curiously enough a vase of form (*g*) at Kronstadt approximates very closely to a Villanova ossuary in shape.

Polished stone implements are comparatively rare. The most characteristic is an adze, flat on one face and curved on the other rather like a 'shoe-last celt', but differentiated by its squared small sides and other details (Fig. 65). No perforated stone axes have been found *in situ*. Blades of flint are scattered about in profusion. Even triangular and, perhaps also transverse,<sup>4</sup> arrow-heads and 'saws', i.e. sickle-teeth (Fig. 66, 12),

Stone  
imple-  
ments

Arrow-  
heads

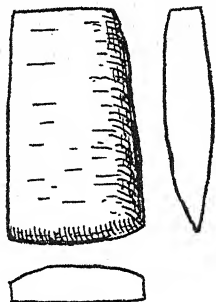


FIG. 65. Stone celts, Oltszem, after László.  $\frac{1}{2}$

occur. Obsidian blades have been found at Málnás and Priesterhügel. The material was probably derived from Mt. Hargita, which is quite near, and not from the Aegean or the Hegyalja.

Sickle-  
teeth  
Obsidian

Bone and horn was very freely used. Chisels, borers, fish-hooks (Fig. 66) and—most characteristic of all—various types of spatulae were made from bone. Horn and antler provided piercers and picks of classic types, and when perforated axes, hammers, and hafts.<sup>5</sup>

Fish-  
hooks  
Horn  
hafts

Copper has been found at most sites, but at Erösd the majority of the finds were made in the upper stratum of burnt clay or the superimposed black earth, though the metal appeared already in the bottom layer.<sup>6</sup> Apart from an axe-adze of the simplest type found above the painted pottery levels, copper occurs

Copper

<sup>1</sup> 1911, fig. 32.

<sup>2</sup> 1911, fig. 86, apparently representing a sheep.

<sup>3</sup> 1924, pl. ix.

<sup>4</sup> MPK. i, p. 367, fig. 4.

<sup>5</sup> Dolgozatok, ii, figs. 90-1.

<sup>6</sup> Dacia, i, p. 27.

only as awls (Erösd), fish-hooks, and pins (Priesterhügel), or beads and bracelets.

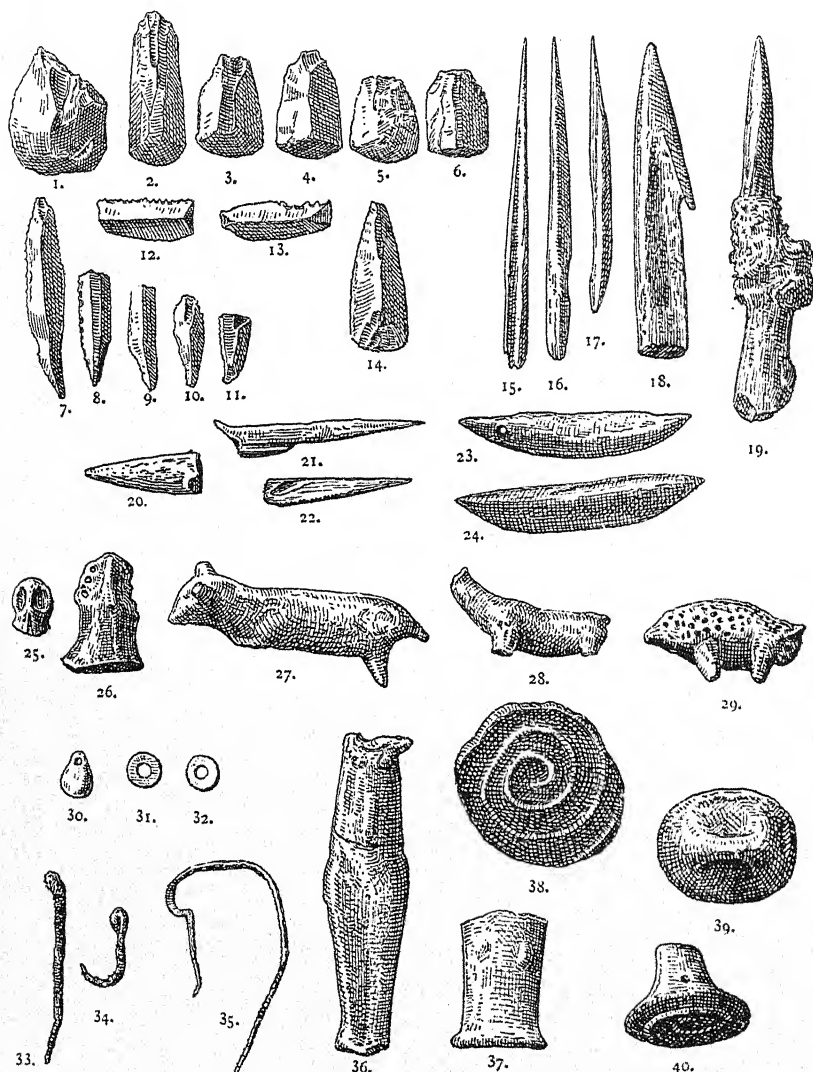


FIG. 66. Flint and bone implements, clay models, *pintaderas* and beads, Priesterhügel, after Deutsch.  $\frac{3}{8}$

*Gold* Gold in form of a thin ribbon helix and a wire ring has been found at a low level at Erösd, and was presumably imported from West Transylvania.

*Figurines* All the settlements yield rough clay figurines. These

generally represent a nude female and slightly steatopygous personage standing erect (Fig. 66, 36). Some have been modelled in two vertical sections which were subsequently stuck together, as in Moravia. One fragment from Erösd is decorated in the style of Cucuteni A. Male statuettes are very rare. One from Oltzsem is depicted squatting. Besides the anthropomorphic figures, models of cattle, sheep, goats, and swine (Fig. 66, 27-29) have been noted. One recently unearthed is remarkably like an elephant.

As ornaments the people of the Alt valley wore bracelets of copper and necklaces composed of copper helices and tubes, *Unio*-shell and marble (? white limestone) disks (Fig. 66, 31), bears' teeth, stags' teeth, and horn beads. A regular hoard of such finery was discovered in a pot lying in the upper layer of burnt clay at Erösd. Rectangular laminae from boars' tusks, perforated at either end for sewing, were also in use. Ornaments

Painting of the person is indicated both by the figurines, ornamented in Cucuteni style, and the occurrence of clay stamps or *pintaderas*, sometimes bearing traces of red colour. They were usually designed to give a double-spiral impression (Fig. 66, 38-40). At Erösd they are restricted to the lowest layer.<sup>1</sup> Tattooing

It is obvious that the creators of this rich civilization were food producers. No grains have so far been studied, but saddle querns have been reported from Erösd and prove the existence of some sort of agriculture. The flint saws, already mentioned, were doubtless mounted as sickle-teeth as in Egypt and elsewhere. The animal bones from Priesterhügel reveal the presence of domestic cattle (apparently related to the *Primitivus* stock), sheep (possibly 'mouflon'), swine, and the Bezoar goat (*Capra aegagrus*). Agriculture

Animals of the chase included stag (*Cervus elaphus*), roe deer (*Capreolus*), chamoix (*Rupicapra*), wild boars, bears, lynxes, foxes, wolves, and wild cats. Animals

Numerous round or pyramidal lumps of baked clay, carefully perforated, may have served as loom weights just as small clay disks are usually described as spindle-whorls. Weaving

No graves or skeletal remains have been found in connexion with any of the twenty-six stations along the Upper Alt. Graves

Settlements with painted pottery of the Erösd type cluster thickly along the Upper Alt above the Kronstadt elbow and Distribution, Alt Valley

<sup>1</sup> László, *Dacia*, i, p. 27, considers that it is just an accident that the five stamps all lay in the bottom stratum.

along the Feketeügy (Schwarzbach) that flows in about this point. The concentration of settlement in these two valleys is doubtless to be explained by the presence here of strips of elevated and open löss country. Otherwise, apart from copper lodes at the source of the Alt, there is no particular attraction in this region unless it be the sulphur springs. The upper reaches, where alone settlement is attested, do not even lead anywhere.

*Extension to Maros* Physiographically the two valleys in question are quite as closely related to the löss and black-earth region of Moldavia and Bukowina as to the Middle or Lower Danube Valley. One unmistakable outpost of the same civilization has, however, been detected farther west at Marosvásárhely (Map III, E) on the Upper Maros. Two prehistoric huts, excavated on the outskirts of the modern town, yielded characteristic ladle-handles, painted in Erösd style, beakers similar to those from Oltszem, a fragmentary female figurine, a stone adze of the usual pattern, a copper awl, and obsidian chips.<sup>1</sup> The huts were excavated in the soil to a depth of 1.40 m. On the very floor of one was found a bowl decorated with a very regular key pattern, left reserved between fine incised cross-hatchings (negative Bükk ware). Intermediate links between the Maros and the Alt remain to be discovered.

*Further parallels* Though the Upper Maros at present constitutes the westernmost outpost of the Erösd culture proper, genuine painted pottery and other objects, often reminiscent of the Alt settlements, are met much farther west. The facts may be summarized briefly. Down the Maros we meet painted sherds at *Tordos* Tordos,<sup>2</sup> probably above the deposit containing Vinča I pottery (and therefore presumably associated with Öcsanád ware). The designs are mainly composed of narrow stripes, occasionally forming spiralfiform patterns but more often rectilinear, of reddish or warm brown paint on buff clay, generally slipped and often polished. Shallow jars with a straight neck rising from a low convex shoulder and straight-rimmed bowls with a distinct keel can be discerned among the fragments at Cluj. Bone spatulae, similar to those from the Alt stations, may belong to the same complex.

*Starčevo* On the Danube at Starčevo, nearly opposite Vinča (Map III, F), a settlement has recently come to light where painted sherds, bone spatulae, and celts, allied to those described above, and

<sup>1</sup> *Dolgozatok*, vi (1915), pp. 230 f.    <sup>2</sup> *ZfE*. xxxv (1903), pp. 448 f., figs. 28-30.  
(summary on p. 303), with figs. 2-16.

obsidian chips occur.<sup>1</sup> Three styles of painting are represented: (a) thin white on red, (b) black on red, and (c) warm black on a buff slip. The designs include chequers patterns in style (b), the alternate squares being cross-hatched exactly as on some Dimini sherds<sup>2</sup> and double spirals in style (c). Corded sherds have been picked up at the same site.

From Babska in Slavonia comes one cylindrical vase of *Babska* coarse reddish ware, showing faint vestiges of maeanders, painted, probably, in warm black paint.<sup>3</sup>

A few very coarse sherds, painted with running spirals on a *Lengyel* bluff slip, have been found at Lengyel too.

On the Körös line we have more material. The cave of *Caves in* Devencze near Rév in the Bihar massif yielded, *inter alia*, a *Bihar* very flat shoe-last celt and many sherds painted in black or *massif* reddish brown or both on red clay or on a grey clay, covered with a whitish slip. Good spirals occur and also a pattern of beaded lines. Cups with concave bases seem common. Coarse wares with finger-nail ornament or rough incisions were collected from the same site.<sup>4</sup>

Farther west, diggings in Guttmann's brickworks on the Körös *Grosswer-* at Grosswerdein (Oradia Mare) have produced large masses of *dein* painted sherds as well as other fabrics. The material is probably derived from a stratified settlement, but no scientific excavation is recorded. The painted wares show warm brown paint on buff or red clay, sometimes slipped; occasionally white paint was used. The designs are purely rectilinear. On one fragment a white triangle, outlined in black and with three black dots on it, may be intended to suggest a human face as on certain Tripolye vases. The only discernible shape is a footed bowl like Fig. 33. The same site has yielded black-topped ware and square-mouthed vases as at Tordos.

From the site of Szent András in the same region come some sherds ornamented with spiraliform patterns in black on red, slipped ware.

The lowest stratum at Herpaly near Berettyó Újfalú was a *Berettyó* regular settlement of vase-painters. In and under a dense *Újfalú* layer of burnt-red clay, such as we saw at Erösd, lay abundant sherds of buff ware painted with simple rectilinear designs in warm black paint. The commonest form was the high-footed bowl like Fig. 33. Above the stratum of burnt clay came an almost sterile layer in which only a few fragments of

<sup>1</sup> In Belgrade (unpublished).

<sup>3</sup> M. Zagreb (unpublished).

<sup>2</sup> Tsountas, *ΔΣ*, pl. 8, 2.

<sup>4</sup> M. Cluj (unpublished).

pedestalled bowls and other vases in typical Danubian II monochrome black ware were found. Then after a period of desertion the site was reoccupied towards the end of the Bronze Age.

The painted pottery from the Upper Tisza, though obviously closely akin to that of the Alt, cannot be derived directly therefrom. It belongs to a sister culture sprung from the same root. The chief sites are:

*Lucska* Lucska, one footed bowl like Fig. 33, with rectilinear designs in warm black or brown, from the site of the Danubian II cemetery.<sup>1</sup>

*Sátoralyaújhely* Sátoralyaújhely,<sup>2</sup> on the frontier of Slovakia, many sherds of greyish ware with designs in black and red on a light slip. The motives include spiraliform figures and wavy lines. The painted patterns are often identical with those incised on typical Bükk sherds: such have been collected at the same site. The settlement has also yielded a fragmentary figurine, clay beads in the shape of a four-pointed star, and much obsidian, including some very large blades.

Gáva (Katohalom),<sup>3</sup> near the Tisza, sherds painted in red and black on buff with rectilinear motives. The same site has yielded Bükk ware.

Rakamaz-Timar<sup>4</sup> has yielded similar material to the above, some of the painted sherds showing curvilinear motives.

Bodrogresztur. A few sherds from this site are painted in brown on buff with rectilinear motives. These, like some from Rakamaz Timar, have sometimes been incised after the painting. Probably the painted sherds here were associated with the Bükk wares, and are therefore older than the Danubian II graves.

*Summary* Our picture of the little communities living in the Alt valley on the narrow strips of löss among the forests at the foot of the Transylvanian Alps is unusually vivid. Their culture was a rich one.

Its authors are agriculturalists, stock-breeders, hunters, and fishers; probably Hobhouse and Ginsberg would term them higher agriculturalists, for they evidently engaged in some sort of commerce.

They live in small villages which they defend with trenches and ramparts. They worship a Mother Goddess, like the

<sup>1</sup> p. 81, n. 1, above.

<sup>2</sup> *AE.* xxxii, p. 247 (material at Cluj).

<sup>3</sup> p. 60 above.

<sup>4</sup> Jóna, *Szabolcsvarmegyei Múzeum*, 1899, p. 35.



Danubians, but their burial rites are unknown. The models of animals and household utensils (ovens) may, however, have a mortuary or ritual use.

Aesthetic impulses demand expression in coloured ornament both on vases and within the houses. Even the human body is decorated in the same style. The spiral is used, but in the form of a horizontal S, never elaborated into the running Danubian belt.

The arts of the weaver and the potter are well developed, but stone boring is not attested. Gold and copper were certainly used before the settlements were deserted; possibly they were worked locally.

The leading tools are stone, and perhaps also copper, axes and adzes hafted in deer-horn sleeves, horn axes and mattocks with a hole for the shaft, bone spatulae, flint, copper, or obsidian blades, sickles, armed with serrated flints, and horn or copper fish-hooks. The only specialized weapon is the bow, the arrows being tipped with triangular flint-heads.

Copper and gold beads and helices, disks of *Unio*-shell and marble, boars' tusks and stags' teeth are strung together as necklaces, while plaques cut from boars' tusks are sewn on the garments.

The houses are substantial constructions of the *megaron* type with gabled roofs.

The pottery, essentially a red ware, is kiln-baked. The vases, though still rather primitive, have genuine pot forms. Theriomorphs occur. Handles, however, are absent.

To the east, the culture of Cucuteni A, a fortified village near Iassy, reproduces many of these traits, and indeed direct intercourse is attested by the Cucuteni figurines from Erösd itself. Cucuteni A, in turn, is connected with the earlier Tripolye culture on the Dnieper, which is, however, less like Erösd. *Relations.  
Tripolye  
culture*

Even closer affinities connect Erösd with the Dimini culture of Eastern Thessaly. The agreement in the hafting of the celts, the horn axes, the use of gold for ornaments, the type of house, and above all in the technique and ornamentation of the pottery, indeed amount almost to identity. There can be no doubt that we are dealing with one and the same complex in Transylvania and Greece. It is equally clear that in Greece the complex is intrusive; in Transylvania it is more at home. *Thessaly*

In the intermediate region of Eastern Bulgaria and Thrace, *Thrace*

many Erösd traits<sup>1</sup> recur. But the whole 'copper age' culture of this region has a specialized and later aspect. It might have grown out of the Erösd complex, but is not identical with it.

*Danube Valley* The western relations are equally clear but more ambiguous. The coincidences between the Polgár culture and Erösd are indeed numerous. Among the essential features of the former the love of colour, several types of tool—notably horn axes and stone adzes of more or less shoe-last type, the use of marble for beads, the oven in which the pots were fired, ceramic shapes such as beakers and pedestalled bowls,<sup>2</sup> the figurines and miniature objects—all agree with Erösd. Often this agreement extends to details. We may instance red meanders bordered with white at Polgár (ware A), red patterns reserved between white incrustations (in B), and the manufacture of figurines in two vertical sections. And of course the *pintaderas* recur as an accidental trait in Moravia.

*Theory of a derivation from Danubian II* A temptingly simple explanation of the relationship between the two cultures would be to regard Polgár with its primitive crusting as the ancestor of Erösd and the allied cultures in which genuine painting occurs. Indeed that is in effect the thesis maintained by Hubert Schmidt in several papers;<sup>3</sup> the culture of Transylvania would be just an eastward extension of Danubian culture where painting, invented spontaneously, has replaced incision.

*Schroller's chronology* A more philosophical version of the same thesis has recently been advanced by Schroller.<sup>4</sup> The origin of 'painting' in the Danube basin would be due to the 'influence' of Menghin's 'vorderasiatischer Kulturkreis', which would also be responsible for idols, *pintaderas*, and other innovations noted in our Danubian II. Thessaly I (Sesklo) is invoked as the mediator, and represented as an outpost of the Susa-el'Obeid province of 'textile design'.<sup>5</sup> A partial synchronism between the painted pottery of Thessaly I and the crusted wares of Danubian II is postulated.<sup>6</sup> On the other hand Erösd I is equated with Palliardi's latest phase of the Polgár culture in Moravia: for the *pintaderas* (confined to the oldest village at Erösd)<sup>7</sup> and

<sup>1</sup> Horn axes, the use of 'pintaderas', the rectangular house, the S-spiral, theriomorphic and miniature vases, and figurines.

<sup>2</sup> The rough pot figured by László, 1911, fig. 20, can be exactly paralleled at Lucska, Bodrogheresztur, and Tiszadob.

<sup>3</sup> *ZfE.* 1904, pp. 637 ff.; 1907, pp. 121 ff.; 1911, p. 597; 1924, p. 139.

<sup>4</sup> *MAGW.* lvii (1927), pp. (153) ff.

<sup>5</sup> See, too, Hubert Schmidt, *ZfE.* 1924, l. c.

<sup>6</sup> Cf. The Thessalian sherds from Střelice II and Raigern.

<sup>7</sup> Menghin, *WPZ.* xiv (1927), p. 54.

celts with rectangular cross-section appear in Moravia first in phase C. Hence the Transylvanian culture and, *a fortiori*, those of Moldavia and the Ukraine would as a whole be later than the Danubian II culture with crusted ware.<sup>1</sup> A dependent position for the former would naturally follow as a corollary of this dating.

Several considerations would, however, encourage us to look for a different explanation. Technically the carboniferous Danubian wares reveal a tradition quite opposed to the red ware of Erösd; the artistic principles inspiring the decoration of the two groups are no less divergent;<sup>2</sup> at Erösd we have dishes *and* pedestals as well as the pedestalled dishes that alone occur farther west. The absence from Erösd of such characteristic Danubian (at least Danubian II) elements as the perforated celt would be hard to explain if Erösd were but an outpost of Danubian culture. And Schroller's chronological scheme is not without difficulty.

*Objections*

In Thessaly Erösd is to be equated with period II (Dimini); crusted ware of Danubian II style appears first in the succeeding period III. So, too, the painted pottery on the Upper Tisza at Bodrogkeresztur and Berettyó Ujfalu is older than the dark-faced Danubian II wares.<sup>3</sup> On the Alt socketed ladles that appear at the beginning of Period II in Moravia are only found in the hill-stations of the local 'Nordic' culture that succeeded painted ware at Erösd.<sup>4</sup>

*Erösd,  
Dimini,  
and  
Danubian  
II*

The author therefore suggested in 1925 that Erösd and its congeners should be regarded as outposts of one of the Oriental cultures that flourished in the fourth millennium or earlier. Many of the vase forms, notably the pedestalled dishes and the hollow supports, have precise parallels in the oldest layers of Ur, Kish, and Assur, while Thessaly I offers no intermediate forms. The models of women, animals, and objects and the miniature vases tell the same tale. May not the Erösd culture be due at least to the action of the high civilizations of Mesopotamia on a substratum akin to Danubian I? In other words, to Oriental trading posts or exploratory expeditions in regions

*Supposed  
Oriental  
inspira-  
tion*

seeks to confirm this relative dating on stylistic grounds; the Erösd motives would result from the disintegration of the Lengyel spirals. Frankfort, *op. cit.*, pp. 24 f., has refuted this contention in advance.

<sup>1</sup> But cf. p. 103, n. 1.

<sup>2</sup> Frankfort, *loc. cit.*

<sup>3</sup> But it must be admitted that on the Tisza Danubian II is less sharply defined below than in Moravia; it lasts well into Period III. The negative Bükki vase from Marosvásárhely is ambiguous.

<sup>4</sup> *Jb. Bärzenländ. Mus.*, i, pl. iv, 5 (Schneckenberg near Kronstadt).

inhabited by descendants of the Mezine folk?<sup>1</sup> The Pontic steppe, the Moldavian löss and the Dniester provide possible ways from the Black Sea coasts to the Central European El Dorado.

*Con-  
nexions  
between  
Tripolye  
and  
Sumer* Frankly, many steps have to be interpolated between Mesopotamia and Erösd or Berettyó Ujfalu, steps in which the mace and other distinctive Asiatic traits would have been discarded. Researches on the Tripolye culture, published since 1925,<sup>2</sup> give grounds for the expectation that some missing steps may be recovered in the Ukraine. Peculiarly suggestive is the comparison, instituted by Shcherbakivski,<sup>3</sup> between the *ploshchadki* of the Kiev Government and the 'incineration necropolis' at Surghul, described by Koldeway. The same author has drawn attention to other Oriental traits in the Tripolye culture, such as the occurrence of camel-bones.

If we admit the existence of a secondary or even tertiary focus of Oriental culture in the Ukraine, we might regard the Transylvanian and Hungarian (Tisza) cultures, described in this chapter, as parallel emanations therefrom. And in that case Danubian II would be the result of the second current acting on the Danubian I-Bükk foundation already existing along the Tisza: the daubs of the Polgár culture would be the results of the attempt to apply Oriental polychromy to the native dark-faced fabrics.<sup>4</sup>

*Difficul-  
ties of a  
high date  
for Erösd* At the moment such speculations are not very profitable. Let us merely remark that the shorter chronology of Schroller possesses positive advantages, inasmuch as a really appalling hiatus in Transylvania can only be avoided by minimizing the antiquity of Erösd. In addition to the desirability of producing some sort of continuity, positive evidence from Moldavia tends to lower the dates of painted ware there. At Cucuteni, Minyan ware was found in the B settlement<sup>5</sup> that succeeded that partly contemporary with Erösd. Since the occupation of Cucuteni B therefore falls within the limits 1800-1500 B.C., it is difficult to push the previous settlement<sup>6</sup> and, with it, Erösd far into the third millennium.

It is for our Ukrainian and Szekler colleagues to find the

<sup>1</sup> There are plenty of 'epipalaeolithic' remains in the Ukraine and Crimea, and at Erösd itself we have reminiscences of epipalaeolithic bone- and horn-work.

<sup>2</sup> Трипільська культура на Україні — *La Culture de Tripolie en Ukraine*, i,

Kiev, 1926.

<sup>3</sup> *Ibid.*, pp. 120 ff.; *résumé*, pp. 203 f.

<sup>4</sup> Frankfort, *op. cit.*, p. 27.

<sup>5</sup> *Jb. d. Inst. A.A.*, 1923-4, p. 351.

<sup>6</sup> Frankfort (*op. cit.*, p. 20), in opposition to the excavator, postulates a gap between Cucuteni A and B.

evidence which shall confirm one thesis or the other. We content ourselves with tabulating the two alternatives as follows:

	<i>Danube Valley.</i>		<i>Alt Valley.</i>	<i>Moldavia.</i>		<i>Thessaly.</i>	
Long	Danubian Period	I	=	Erösd 1	=	II	2500
				Erösd 2	—		
	Period „	II			=	III	2250
		III		Nordic			
Short	Danubian Period	IV			=	IV	1750
				Cucuteni B			
		I		—		I	3000
		II <sup>a</sup>					
		II <sup>b</sup>	=	Erösd I		II	2500
		III		Erösd II			
		IV			Cucuteni A —	III	2250
		V			transition Cucuteni B	IV	1750

Any one who examines the two schemes impartially must prefer the latter. Despite the objections urged against it, it gives the more consistent view: if it be accepted, it will follow that Erösd and Polgár are the parallel results of the action of Thessaly I on Tordos (Vinča I) and Bükk respectively. Since we have direct evidence of interrelation between Thessaly I and the Danube basin at the beginning of Period II, such results will be less surprising. We shall be, then, inclined to see in the painted wares of the Tisza the firstfruits of the Thessalian reaction rather than degraded descendants of Erösd. There would then be no Oriental inspiration affecting the Danube basin at the beginning of Period II;<sup>1</sup> on the contrary, the Danube would be the channel by which the culture of the South-East was transmitted to the Ukraine.

<sup>1</sup> Steppe influences, however, soon appear.

## VII

### THE NORDIC CULTURES IN THE DANUBE CORRIDOR

**D**URING Periods II and III the current of civilization was flowing steadily up the Danube corridor. In Period III we discern counter-currents set up by the reaction of epipalaeolithic elements to the southern influences, and the interaction of other streams of culture flowing along the Atlantic coasts and across the South Russian steppes. Period III takes us into the full Subboreal Epoch when there was space for movement and free intercourse.

#### I. SUMMARY OF SCANDINAVIAN DEVELOPMENTS

An account of Scandinavian prehistory lies outside the scope of the present work. But since a very fine chronological scheme has been worked out for Scandinavia, and since it has been applied by many authors to our area also, a very brief summary of the cultures identified on the Baltic coasts and their succession must be inserted here to make the sequel intelligible.

In Denmark and Southern Sweden a vigorous neolithic civilization arose among the descendants of the epipalaeolithic Shell Mound and Maglemose folk, with one centre round the amber deposits of Jutland.

*Montelius' chronology* Montelius divided the northern Stone Age into four typological phases characterized by the types of celts and tombs. His scheme is as follows:

1. Polished flint celts with pointed butts.
2. Thin-butted celts, Dolmens (small megalithic chambers of three or five uprights and one capstone).
3. Thick-butted flint celts, stone battle-axes, Passage Graves (large megalithic chambers, generally oval, with a covered passage leading into them).
4. Thick-butted flint celts, flint daggers, Long Stone Cists (oblong megalithic chambers generally sunk in the earth).

*Montelius* <sup>1</sup> Doubt has been cast upon the reality of phase 1. In any case, though Sophus Müller <sup>2</sup> treats as pre-dolmen certain implements never found in dolmens or later tombs, nothing can be predicated of the supposed period. Actually the Shell-Mound culture lasted into Dolmen times.<sup>3</sup>

<sup>1</sup> Knut Stjerna, 'Före Hällkisttiden' (in *Ant. Tids. Sv.* xix), p. 60.

<sup>2</sup> *MSAN.* 1914-19, pp. 58 f.

<sup>3</sup> Franz, *MAGW.* lvii, p. 22.



In Montelius' 2 three distinct civilizations can be recognized. *Monte-*

- A. The Dolmen culture proper, restricted to the coasts and islands. It was created by a maritime and probably a commercial folk. Besides fishing they tilled the ground and bred domestic animals. Their chief grain was probably emmer. *lius 2*

They practised collective burial in megalithic tombs.

As weapons they perhaps used polygonal battle-axes (cf. Fig. 77 below).<sup>1</sup>

Amber was used for beads.

The leading ceramic types were collared flasks, funnel-necked beakers, and amphorae rather like those of Figs. 67, 2.

- B. In the interior of Jutland, in South Sweden, and on certain islands are found remains of a warlike people who buried their dead individually in trench graves under barrows.

The artifacts are as in group A; save that beakers ornamented with cord-impression occur.

- C. Outside the sphere of these cultures in Norway and inner Sweden an epipalaeolithic culture continued.

Period 2 still falls within the Atlantic Epoch. The southern limits of the Nordic culture as marked by the distribution of thin-butted flint celts lie essentially along a line from Bremen to Stettin.<sup>2</sup>

It is admitted that all these civilizations were partly continuous with the epipalaeolithic cultures that preceded them, but that the idea of megalithic architecture was introduced from the west by sea. Sophus Müller would recognize in addition a current from the south-east that introduced the collared flasks and their kindred, and, presumably, the polygonal battle-axes.

All three groups persisted in a modified form into the next period. *Monte-*

- (A) The megalithic civilization remains essentially commercial with wider connexions both to the south and the west than before. *lius 3*

The size of the Passage Graves, involving inconceivable labour in their construction, as well as the number of corpses they contain, implies the existence of substantial communities inhabiting the same district for several centuries. The furniture found in the tombs can be distributed between at least two phases:

- (3a) Weapons: double battle-axe like Fig. 82, and disk-shaped

<sup>1</sup> *MSAN.*, l.c., p. 62.

<sup>2</sup> Åberg, *Nordic*, p. 11.

mace of stone, and bow with transverse arrow-heads or arrow-heads with a triangular cross-section.

Ornaments: amber necklaces often consisting of three strings of beads linked by triply bored centre-pieces (cf. Fig. 133, a) and particularly axe-shaped beads of amber.

Pottery: Angular vases, often with handles, recalling basketry forms. The decoration is at first arranged vertically and executed with a braid of cords, later a horizontal arrangement prevails and the decoration is effected with the edge of a *Cardium* shell or a comb-like implement of bone.

Pedestalled bowls and socketed ladles disclose contact with the Danubian area.

The improvement in funerary architecture, on the other hand, can only be due to continued intercourse with the west. Moreover the current decoration can be paralleled best in Sardinia and Spain.

- (3b) Weapons: Flint daggers gradually replace battle-axes, fine barbed arrow-heads<sup>1</sup> come into use.

Ornaments: amber is rare. Instead slate pendants and shell disks are worn. Bone pins clearly imitating bronze models are used to fasten the garments.<sup>2</sup>

Pottery: more rounded forms, hanging vases, gradual degeneration of the ornament, use of *oculi* and rayed circles.

As foreign elements zoned beakers<sup>3</sup> appear.

Besides the zoned beakers, the above-mentioned bone pins unambiguously attest intercourse between Denmark and the Danubian area; the prototypes were current in Bohemia during the Early Bronze Age (our Period IV).

In Denmark the Passage Grave culture remained essentially coastal. But at the end of the Dolmen Period the megalithic culture had expanded inland into North Germany and as far as Holland. Both the tombs and their contents, however, diverge from the Danish standard. In North-Eastern Germany the dolmen did not grow into a passage-grave but just sank underground. On the North Sea coasts the passage grave is represented by a long chamber with a short gallery opening into the long side (as in Fig. 84). Such tombs contain rare thin-butted celts and collared flasks as well as thick-butted

<sup>1</sup> As in Müller, *Ord.*, 178, 181.

<sup>2</sup> *Nord. Fort.* ii, figs. 49 and 54.

<sup>3</sup> *Ibid.*, fig. 81 (upper stratum at Bigum); cf. p. 200 below.

celts and pottery more or less reminiscent of Danish Passage Grave ware.

(B) In Inner Jutland the civilization of the separate graves continues. Its authors were definitely warlike.

The main weapon is the battle-axe supplemented by a spheroid mace.

The amber ornaments are different from those of the collective tombs; large disk-shaped beads are most characteristic. Necklaces of animals' teeth are also worn. The typical vase is a beaker, ornamented at first with cord impressions, later with herring-bone bands round the neck.

The same barrow often contains a plurality of interments. The oldest, termed Bottom Graves, are trenches in virgin soil. Later come Ground Graves on the ground level. The latest class, Upper Graves, laid in the mound itself, belong to Montelius' period 4. A steady degeneration is observable alike in the pottery and the battle-axes throughout this series.

(C) Various cultures, preserving epipalaeolithic traditions, though increasingly influenced by groups (A) and (B), persist, but outside our area.

In period 3 a Subboreal climate was already ruling.

In period 4 the distinction between the three groups is disappearing. Though collective burial in Long Stone Cists and individual interment in Upper Graves subsist side by side, the furniture of the two classes of sepulchre is indistinguishable. The two groups are fusing into a single community, preserving the traditions of both. *Montelius 4*

The main weapon is now the flint dagger, often wonderfully worked with ripple flaking, but degenerate battle-axes are still used.

Slate pendants and shells serve as ornaments. The pottery is poor, the main type being a vase like a 'flower pot'.

From Bohemia gold spirals like Pl. 14, D 4 and bronze pins were occasionally imported.

On the strength of the links with the Danube area cited above Montelius' periods can be approximately equated with ours as follows:

Montelius 2	=	Period II
Montelius 3a	=	Period III
Montelius 3b 4 }	=	Period IV

Most German and Swedish authorities would reject such an equation, believing that 'neolithic' is a concept of universal

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 validity like pleiocene. Their chronologies would be somewhat  
 as follows:

<i>North.</i>		<i>Danubian period.</i>
Montelius 1		
Montelius 2	=	I
Montelius 3a	=	II (Lengyel-Jordansmühl)
3b	=	III (Nordic culture)
Montelius 4	=	IV (Aunjetitz)

## II. THE 'DANORDIC' CULTURE IN EAST CENTRAL EUROPE

In the valleys of the Oder, the March, and the Upper Elbe the pure Danubian cultures were succeeded by a far less homogeneous group to which the general name Nordic has been given by Silesian and Czech archaeologists. The term is certainly justified in the sense that the new civilization exhibits relations with those of Scandinavia and the Baltic coasts that cannot be detected in Danubian I or II. Several leading vase forms, certain types of ceramic decoration, the use of flint for celts, a taste for amber beads and other features, are common to the Danubian regions at this epoch and to the Baltic coasts in the days of the earlier megalithic tombs. Moreover, the new culture seems intrusive in the lands previously occupied by Danubians. Its authors, unlike the Danubian peasants, were great hunters; they sometimes occupy strategic positions on hill tops instead of the fertile valleys; they manufacture weapons—battle-axes, arrow-heads, and maces—in abundance; they introduce new varieties of domestic animals and cultivated plants. Hence the new culture marks a breach with the older tradition. To avoid prejudicing the theory of its derivation from the Scandinavian-Baltic megalith-culture we shall adopt the term Danordic to designate the *specialized* 'Nordic' culture of our authorities.

*Break with the past*  
*Distribution* The Danordic culture in this sense has a wide distribution east of the Elbe that only partially coincides with that of the preceding Danubian. Its local variations are, however, much greater. In Silesia it is represented in a classic form at Nosswitz near Glogau<sup>1</sup> and then again in huts and graves at Jordansmühl. Farther east there are many groups of allied finds, constituting Kozłowski's<sup>2</sup> 'Great Polish' culture, from points lying quite off the löss in Poznań and Great Poland and at 'camping places' on the sand-dunes of Little Poland.<sup>3</sup> In hut-foundations

<sup>1</sup> Seger, *SV*. vii (1916), pp. 27 ff.

<sup>2</sup> *Młodsza*, pp. 26 f., Map I and pl. v.

<sup>3</sup> Kozłowski, *Młodsza*, pp. 60, 163, and pl. xiv.

on the löss hills round Miechow, Pinczow, and Sandomierz,<sup>1</sup> and in cemeteries along the Vistula<sup>2</sup> (Zastow near Krakow and Nalenczow near Lublin) pottery and implements more akin to the Silesian are the rule. On the Moravian löss lands we find many settlements and also cemeteries, notably round Prossnitz<sup>3</sup> (Proštejov), but the classic site is the Starý Zámek (Old Castle) near Jevěšovice. At this hill station the Danordic culture was encountered in the lower level in a deposit thick enough to allow of the recognition of two ceramic phases. The same culture spread down the Elbe to the vicinity of Prague and eventually into Saxo-Thuringia. Westward an allied complex appears in Bavaria and Upper Austria.

The fine ware at least corresponds closely to Danubian II fabrics in technique, being evenly fired, polished, and often slipped. The colour varies from deep brown to black. Some of the large jars are naturally rougher in workmanship and more gritty in texture. *Pottery technique*

Very often, save on the Middle Oder, the pottery is decorated only by knobs or plastic strips. Where ornamentation is present, it is usually deeply incised by the so-called 'furrowing' process<sup>4</sup> as described on p. 52. Various combinations of deep strokes or jabs with the furrowed line were also employed; for instance, sideways jabs might alternate with the regular progressive movements. At Nosswitz a double braid of cord was sometimes impressed in the clay, as in Danish Passage Grave ware, but the aid of a stamp was never invoked. Simple cord impressions are by no means rare; in Silesia and in Poland such grow into a regular mixed style. One object in all these devices was of course to give a firm grip for the white filling. The favourite arrangements for the linear patterns are horizontal zigzag bands and hanging fillets. Decoration in this style is best represented at Nosswitz. It is also fairly widely diffused in the area of the Great Polish culture, but is rare at Jordansmühl and in the Vistula cemeteries. It reappears, however, in the upper strata of Starý Zámek I—here sometimes with spiral motives—and then again in the Mondsee pile-villages. *Ornamentation*  
*Furrowing*

The forms of the Danordic pottery allow of a finer subdivision of the whole culture. A relatively closed group is constituted by collared flasks (Fig. 67a), funnel-necked beakers (Fig. 67c), and amphorae with the handles at the base of the *Forms*

<sup>1</sup> *WA.* ix, pp. 243 and 34; *Nied. Sb.*, p. 244.

<sup>2</sup> Demetrykiewicz in *Wiad NA.* iv, 2.

<sup>3</sup> Gottwald, *PSP.*, p. 29.

<sup>4</sup> For the technique see Seger, *SV.* vii, p. 40.

cylindrical neck (Fig. 67b). These three shapes recur together, albeit much altered, in the Danish Dolmens and contemporary Separate Graves. Even this group must be subdivided. Kos-sinna<sup>1</sup> recognizes, besides the Dolmen vases of Denmark and a later group in the megalithic tombs of North-West Germany and Holland, an eastern and a southern group. In the former the collars of the flasks are milled at the edges while the body is plain; the funnel-necked beakers are ornamented with incised zigzags below the rim, the body again being plain. These types are represented at Nosswitz and Jordansmühl in Silesia, at isolated sites between the Middle Oder and the Vistula elbow near Torún and in Great Poland.<sup>2</sup>

Farther south in Moravia, Bohemia,<sup>3</sup> and Saxo-Thuringia flasks and beakers are alike unornamented. In revenge a collared flask from Nalenczow on the Vistula and another from Leitmeritz near the Elbe gorge in Bohemia<sup>4</sup> were provided with handles, and one from Zastów stood on four little wart-like feet. South of the Oder the group seems to become dissociated; at Starý Zámek<sup>5</sup> the funnel-necked beakers occurred, quite properly, in the first settlement, but the collared flask fragments were found in the overlying strata, with corded ware. At Leitmeritz, too, the flasks were said to be associated with corded ware.<sup>6</sup> Associated at Zastów with a collared flask was a large jug with a broad strap handle widened out into two ears—this so-called *ansa lunata* is characteristic of the 'Nordic' culture in Bohemia<sup>7</sup> (Fig. 74). We have already met the type as a strange intruder at Lucska and Tisza Dada.<sup>8</sup> But in Moravia this type, like the collared flask, belongs to Starý Zámek II.

The amphorae keep their shape on the whole very consistently. An interesting feature of the group in Saxo-Thuringia, however, is the handsome plastic decoration under the handles (Fig. 68).<sup>9</sup> So, too, the Saxo-Thuringian funnel-necked beakers are sometimes provided with handles (Fig. 69).

<sup>1</sup> *Mannus*, xiii, pp. 35 and 148.

<sup>2</sup> Kozłowski, too, divides the group represented in the löss areas and dunes of Little Poland and in the Vistulan cemeteries from the other Polish types which he assigns to his Great Polish culture (*Kultura Wielkopolska*); *Młodsza*, pp. 28 f.

<sup>3</sup> From Časlau to Leitmeritz, Stocký, *PZČ.*, p. 98, with map.

<sup>4</sup> *Mannus*, xiii, p. 15, fig. 57.

<sup>5</sup> Other Moravian flasks are isolated specimens from Opava (Troppau), Luto, and Cherlice (*Real.* ii, p. 63).

<sup>6</sup> *Mannus*, ix, p. 218.

<sup>7</sup> Schráníl (*Böhmen*, p. 66) connects the type with the fluted ware from the south-east; cf. *Pravěk*, 1910, pl. xi. Note the ridges between the ears in No. 7 as in our fig. 47, 1.

<sup>8</sup> p. 81 above.

<sup>9</sup> Niklassen in *Mannus*, xii, pp. 329 f.



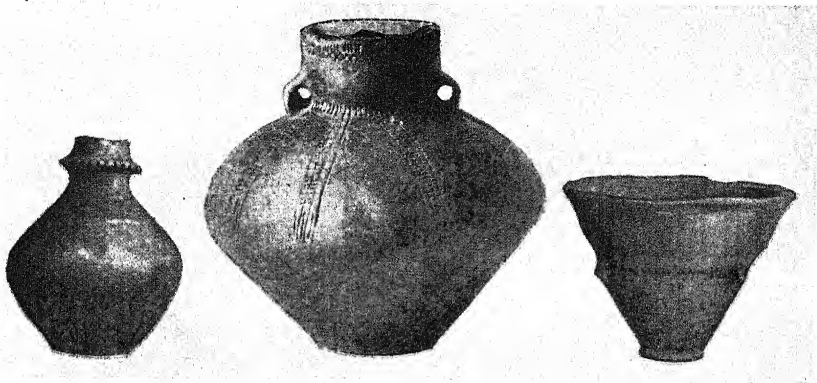


FIG. 67. Collared flask  $\frac{1}{4}$ , amphora  $\frac{1}{8}$ , funnel-necked beaker, Silesia.  $\frac{1}{8}$



FIG. 68. Amphora from Rössen, M. Halle.  $\frac{1}{4}$

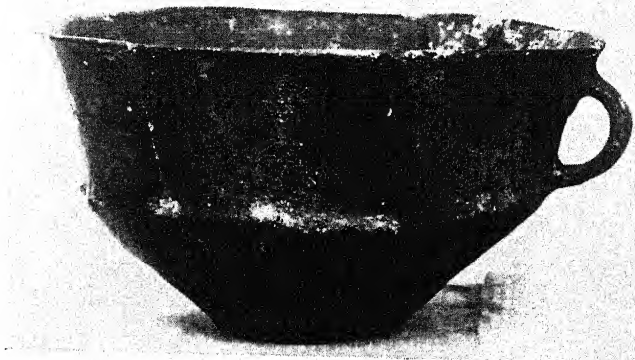


FIG. 69. Funnel-necked beaker, Hohen, Saalkreis. M. Halle.  $\frac{1}{8}$



In Silesia, Bohemia, Moravia, and Saxo-Thuringia the other distinctive forms include piriform jars with three, or more rarely four, small handles on the shoulder or the belly (Fig. 70) and various open jars or pithoi. At Starý Zámek a vessel, tubular throughout and equipped with small handles, was identified. Such curious objects have been interpreted as drums (cf. Fig. 81b). They are more often associated with the Bernburg culture in Central Germany, but fragments have been found at Dankowitz and near Troppau (Opava) in Silesia.

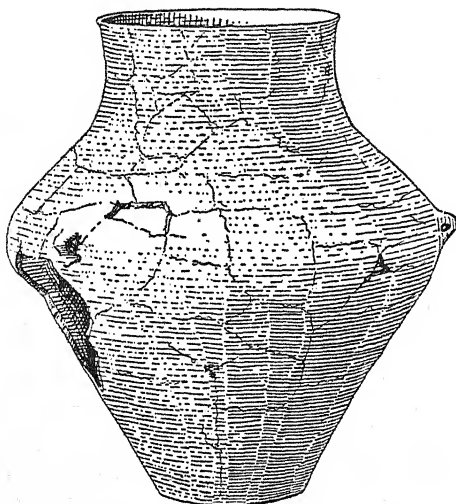


FIG. 70. Piriform jar, Nosswitz, after Seger.  $\frac{1}{3}$

Cups with one comparatively elevated handle are also characteristic. Some are clearly funnel-necked beakers with a handle added. Finally, large open jars, generally with a plastic moulding round the rim, arcaded by finger-tip impressions, are common in Thuringia, Silesia,<sup>1</sup> Poland,<sup>2</sup> and Moravia,<sup>3</sup> where they are especially common in the lower levels at Starý Zámek I. These jars generally are typical of the East Alpine cultures, but have exact parallels in Starý Zámek.

Within the framework of Period III and generally associated with 'Danordic' pottery appear certain ceramic phenomena that Menghin<sup>4</sup> and Stocký<sup>5</sup> have rightly recognized as sympto-

<sup>1</sup> *SV*. vii, fig. 161.

<sup>2</sup> *WA*. ix, p. 209, figs. 10-11; Kozłowski, *Młoda*, pls. v, 5 and xiv, 7.

<sup>3</sup> Seger in *SV*. vii, p. 32; Åberg, *Nor-*

*dic*, pp. 16 f.

<sup>4</sup> *Urgesch.*, p. 760: 'Badenerkeramik.'

<sup>5</sup> *PZČ.*, pp. 104, 147; Schráníl, *Böhmen*, p. 65.

matic of a distinct cultural current. These phenomena appear most distinctly in the upper stratum of the first settlement on Starý Zámek<sup>1</sup> in company with an elaboration of the ordinary 'Danordic' black ware and furrowed ware of the Nosswitz style.

In the first place a new style of decoration appears, the use of shallow flutings or groovings—a technique that had long been at home farther south (Figs. 71 and 72a). Outside Hungary this fluted ware is known in the Danubian II station of Gocsnód in Western Slovakia, at the Königshöhle near Baden,<sup>2</sup> and elsewhere in Lower Austria, at several sites in Moravia and in Bohemia;<sup>3</sup> farther north such ornamentation is rare, but it occurs on a few sherds at Nosswitz in Silesia;<sup>4</sup> and perhaps on some vases from Little Poland.<sup>5</sup>

Near Baden, at Starý Zámek, at Charvátý near Olomouc, and elsewhere vases of this fabric are provided with 'subcutaneous' or 'vertical tunnel' handles; holes in outer wall of the vase above and below the widest point are joined by an internal tube (Fig. 71).

To the same complex belong a class of cups with very high handles<sup>6</sup> (Fig. 73). Stocký assigns to the same group the wing-handled (*ansa lunata*) jugs and mugs that in Galician tombs accompany collared flasks (Fig. 74).

In the same context as the fluted ware we find various large pithoi—piriform,<sup>7</sup> globular; or almost cylindrical. The surface is often intentionally roughened. And, besides fluting, knobbed decoration (Fig. 71d) was in use at Starý Zámek I b and allied sites.<sup>8</sup>

Finally, vases with a cruciform foot, derived in the last resort from Danubian II types,<sup>9</sup> begin to appear in a Danordic context both in Bohemia<sup>10</sup> and Lower Austria.<sup>11</sup>

*Celts* The stone implements of the Danordic culture are more uniform than the pottery. The polished celts, whether of flint or stone, are quite unlike those of the previous epochs. The faces are practically flat, and even the small sides are squared (Fig. 76). The whole implement has therefore a very metallic

<sup>1</sup> Palliardi, *Chron.*, pp. 15-16.

<sup>2</sup> Kyrle, *ÖKT.* xviii, pp. xiii, xix, and xxv.

<sup>3</sup> Stocký (*op. cit.*, fig. 51) gives a map of the distribution.

<sup>4</sup> *SV.* vii, p. 43, fig. 172.

<sup>5</sup> Kozłowski, *Młodsza*, pl. XIII, 4, 5, 8.

<sup>6</sup> Nyitra County, Slovakia (Stocký, *PZČ.*, fig. 50); Bohemia (*ibid.*, pls. xci,

xciv, xcvi &c.); Little Poland (Kozłowski, *op. cit.*, pl. XIII, 1, 4-6); Silesia (*SV.* vii, fig. 157).

<sup>7</sup> Palliardi, *op. cit.*, figs. 24-5.

<sup>8</sup> Stocký, *op. cit.*, pl. c, 14; cf. fig.

<sup>9</sup> The whole evolution may be seen at Óbessenyő.

<sup>10</sup> Stocký, *op. cit.*, pl. c, 9.

<sup>11</sup> *MAGW.* xliii, p. 100.



FIG. 71. Fluted cup with subcutaneous handles, Charváty,  
M. Olomouc.  $\frac{2}{3}$



FIG. 72. Pottery from Starý Zámek I b. M. Brno



FIG. 73. High-handled cups from Visočany, Narodni, M. Prague.  $\frac{1}{3}$



FIG. 74. Ansa lunata cup, Dáblice. M. Prague.  $\frac{3}{8}$



FIG. 75. Ansa lunata vase, Úholičky. M. Prague.  $\frac{1}{2}$



look. Flint is frequently used for the material for celts in Silesia and Poland, and more seldom in Moravia and Bohemia too. It is another innovation. Besides the polished specimens, that correspond to the thick-butted type of Scandinavian archaeologists, a rough, flaked variety with a pointed-oval cross-section (Fig. 75e) was in use. Despite their 'Campignyan' look, these tools have straight cutting-edges and

*Use of  
flint*

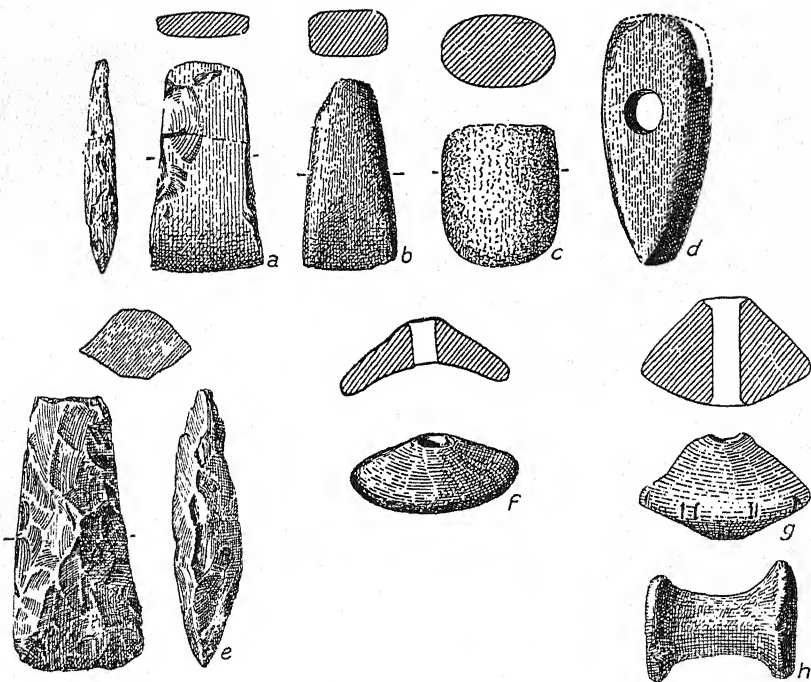


FIG. 76. Danordic celts f-g  $\frac{3}{4}$ , whorls and spool, after Seger a-e  $\frac{3}{8}$

exhibit other features which prevent us assigning them to a 'Campignyan' epoch.

Hammer-axes of a wedge-shaped outline with rounded butt-ends, a variant of the later Danubian II type (Fig. 75d), have been found at the settlements of Starý Zámek, Nosswitz, and Jordansmühl and elsewhere. Polygonal battle-axes (Fig. 77) are associated with the collared flasks, beakers, and amphorae of the cemeteries along the Vistula, and occur in the Nordic barrows of eastern Moravia.<sup>1</sup> The same type of battle-axe is said by Sophus Müller to belong to the Dolmen Period in Denmark. The distribution of these battle-axes coincides so

*Hammer-  
axes*

<sup>1</sup> *Real.* vii, p. 53 and pl. 24 B.

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 closely with that of collared flasks that their attribution to the  
 Danordic culture is unquestionable (map IV); they extend with  
 the latter (but without collared flasks) across Czechoslovakia

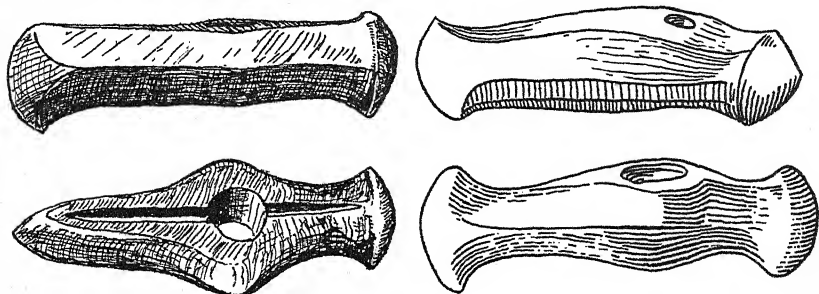


FIG. 77. Polygonal battle-axes, after Gottwold and Reinerth.  $\frac{1}{4}$

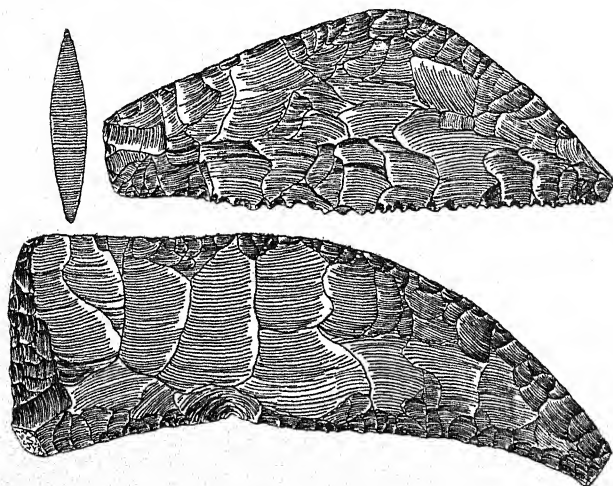


FIG. 78. Flint sickles, Bug culture of Volhynia, after  
 Kozłowski.  $\frac{1}{2}$

into the Alpine zone. Stocký<sup>1</sup> assigns spheroid mace-heads  
 to the Danordic cultures.

*Arrow-heads* An abundance of triangular or concave based arrow-heads,  
 borers, knives, and scrapers of flint is again a feature that every-  
 where distinguishes the Nordic culture from those that pre-  
 cede it.

*Sickles* Crescent-shaped sickles<sup>2</sup> of stone or flint are met in Mo-  
 ravia (Stary Zamek) and in Bohemia (Kamýk).<sup>3</sup> Analogous

<sup>1</sup> PZČ., p. 113.

<sup>2</sup> On these see Vayson, *L'Anthr.* 1919,  
 pp. 413 f.

<sup>3</sup> Stocký, PZČ., p. 113, assigns such  
 implements to the Early Bronze Age.

implements occur in the 'mixed culture' of Złota in Poland<sup>1</sup> and, in still greater numbers, on the Upper Bug in Volhynia.<sup>2</sup> Westward they spread into the Alpine zone, together with the polygonal battle-axes. Related are polished stone knives from Stary Zámek, and the early Bronze Age sickles<sup>3</sup> that are only a little later in date.

Bone and horn implements were manufactured on a large scale by the 'Nordic' people in contradistinction to the Danubians. Antler picks, axes, and mattocks with a shaft hole,<sup>4</sup> the latter squared at Stary Zámek, are notable. Cylindrical bone points sharpened at each end also occur.<sup>5</sup> Phalanges of small animals were hollowed out, presumably for use as whistles.<sup>6</sup>

*Bone and  
horn*

Finally, copper was not unknown. It is represented by awls and rings from Stary Zámek and Nosswitz and trinkets from graves at Jordansmühl, Ohrozine near Proštějov, and elsewhere. In the East Alpine settlements even flat celts and daggers of this metal occur. In Sweden a polygonal battle-axe of the same material was found, and several stray hammer-axes of copper from Czechoslovakia and Saxo-Thuringia may be assigned to this culture.

*Copper*

Amber, in the form of rings, first meets us in the Danordic graves at Jordansmühl and in Poland at Nalenczów and elsewhere; in Bohemia *Pectunculus* shells are common in deposits of the period.<sup>7</sup> Otherwise we find no very distinctive ornaments unless the clay spindle whorls and two roughly anthropomorphic pendants carved in bone from Slánská Hora<sup>8</sup> should be so described.

*Amber*

Spindle whorls, generally flat or even concave on one side and convex or conical on the other (Fig. 76f) are universally encountered in Danordic settlements. In addition pyramidal 'loom weights' and clay spools (Fig. 76h)<sup>9</sup> occur to attest the art of weaving.

*Whorls*

Plastic products in clay were not altogether strange to the Danordic culture. Models of rams or bulls, of 'thrones', of *phalli*, and of perforated axes were picked up at Stary Zámek. Recently a truly magnificent statuette of a ram,<sup>10</sup> about one foot

*Clay  
models*

<sup>1</sup> *WA.* ix (1925), p. 222.

<sup>2</sup> Kozłowski, *Młodsza*, pp. 85 f., pl. XXIII.

<sup>3</sup> Franz, *Mondsee*, pp. 19 ff.

<sup>4</sup> *Altschlesien*, i, pp. 199 ff.

<sup>5</sup> e.g. Stocký, *op. cit.*, pl. LXXXV, 41.

<sup>6</sup> Stocký, *PZČ.*, pl. CIII, 55, 58; Palliardi, *Chron.*, p. 14 (Stary Zámek 1a).

<sup>7</sup> e.g. at Šarka, Stocký, *PZČ.*, p. 113, pl. LXXXVIII; Schránil, *Böhmen*, p. 68.

<sup>8</sup> Stocký, *op. cit.*, pl. LXXXV, 36.

<sup>9</sup> Stary Zámek, Nosswitz (*SV.* vii, fig. 130).

<sup>10</sup> *Altschl.* i (1926), p. 206 and pl. XXVIII

high, was found with funnel-necked beakers at Jordansmühl. Probably the models from Slánská Hora<sup>1</sup> in Bohemia belong to the same family.

*Houses* The domestic architecture of this epoch does not seem to have been uniform. At Nosswitz the Danordic houses were rectangular and built on the ground level, the walls being supported by posts. Something of the same sort may be suspected at Starý Zámek. At Jordansmühl, in the löss regions of Poland, and in Bohemia 'Nordic' pottery, like Danubian, was found in pit-dwellings, but also in square huts with wattle and daub walls supported by a double row of posts.<sup>2</sup>

*Graves* Burial rites were no more uniform. At Jordansmühl all the dead lay in trench graves, but the tombs containing Danordic ware were distinguished from the rest by a border of large stones.<sup>3</sup> Along the Vistula the tombs were cists of small stone slabs, each designed for one contracted skeleton. Cists also occur in Saxo-Thuringia.

*Cremations* The only certain Danordic grave reported from Bohemia was a simple pit containing a contracted corpse. Finally, near Slatenice and at Kosiř and Chrozim near Proštějov in Moravia,<sup>4</sup> cremation was the rule. The ashes were placed beneath inverted jars, and the grave was marked by a mound. The cinerary urns showed the plastic rim-decoration described by Palliardi at Starý Zámek as the 'Pfahlbautypus', but with them went funnel-necked beakers, collared flasks, three-handled jars, fluted cups, and polygonal battle-axes. The comparative rarity of pure Danordic graves deserves special notice: no cemetery corresponding to the village of Starý Zámek has been located; at Książnice Wielkie near Pinczow in Poland, Żurowski found corpses accompanied by Corded Ware buried in 'niches' in hut-foundations filled with remains of typically Danordic pottery<sup>5</sup>; so too at Złota the huts contained a sort of Danordic pottery, and the tombs corded ware.<sup>6</sup> Hence Antoniewicz and Żurowski conclude that 'Corded Ware' was just a special funerary fabric, manufactured by the 'Nordic' villagers.

*Physical type* The few skeletal remains, indubitably attributable to this group, have been only partly studied. According to Rosiński<sup>7</sup> the authors of the Little Polish culture belong to Czekanowski's

<sup>1</sup> Pič, *Starozitnosti*, i, pl. LXXV.

<sup>2</sup> Schránil, *op. cit.*, p. 71, fig. 8.

<sup>3</sup> Dawn, fig. 83.

<sup>4</sup> Gottwald, *PSP.*, p. 34 and fig. p. 32;

*Real.* vii, p. 54.

<sup>5</sup> *WA.* ix, p. 341.

<sup>6</sup> *Ibid.*, p. 243.

<sup>7</sup> *Ibid.*, pp. 41-9; *IIA.* ii, p. 172. The cranial indices range from 68.04 to 83.05.

'pre-Slav' race mixed with elements akin to the 'Grenelle race' of French anthropologists. The 'pile-dwelling' analogies of the Danordic pottery would be due to this latter stock.

Despite their love of hunting, the authors of the Danordic culture kept domestic animals and cultivated grains. The domestic animals attested for this epoch are:

Cattle	<i>Bos brachyceros</i> . <sup>1 2 3</sup>
	<i>Bos primigenius</i> . <sup>2 4</sup>
	<i>Bos akeratos</i> . <sup>5</sup>
Swine	<i>Sus palustris</i> . <sup>2</sup> ; <i>Sus scrofa</i> . <sup>1 4</sup>
Sheep	<i>Ovis aries palustris</i> . <sup>2 4</sup>
Goats	<i>Capra hircus palustris</i> . <sup>4</sup>
Dogs	<i>Canis palustris</i> . <sup>2 3 4</sup>
	<i>Canis intermedius</i> . <sup>2 4</sup>
	<i>Canis fam. matris optimae</i> . <sup>3</sup>

This list reveals the advent of two new types of dog, and the survival of domesticated cattle of Urus breed.

Emmer was cultivated at Jordansmühl<sup>6</sup> and Złota.<sup>7</sup>

The relative chronological position of the Danordic culture in the March and Oder valleys is clearly defined. Near Moravské Budejovice anticipations of Danordic decoration are observed in settlements of the latest Danubian II type. At Jordansmühl Danordic beakers and flasks were associated with a late Danubian II amphora in grave 28. At Nosswitz the houses of the Danordic settlement have disturbed those containing Danubian I linear ware; on the other hand, graves belonging to the end of Period III have disturbed the foundations of Danordic huts at this site. Hence, along the Oder-March stretch, the Danordic culture appears at the beginning of our Period III.

Two groups, exhibiting many traits characteristic of the Danordic complex, and already mentioned incidentally, deserve special treatment in view of exceptional anomalies.

In several fortified settlements in Bavaria, notably the Auhögel near Hammerau<sup>8</sup> and Altheim near Landshut,<sup>9</sup> and then on hills round Salzburg<sup>10</sup> and in the pile villages of the

Grains  
Chrono-  
logy

Allied  
cultures

Altheim-  
Mondsee  
culture

<sup>1</sup> Złota, *WA*. ix, 245.

<sup>2</sup> Jordansmühl, *AfA*. v (1906), p. 121.

<sup>3</sup> Bohemia, Schráníl, *op. cit.*, p. 70.

<sup>4</sup> Braunsdorf (Querfurt, Thur.) *Tagungsber. d. Anthrop. Ges.* 1925, p. 39.

<sup>5</sup> In a grave at Złota, *Bull. Acad. Sci., Cracovie*, 1922, 8-10b, pp. 195 ff.

<sup>6</sup> Letter from Dr. Seger; the impress

of grain was found on Nordic vases, and I presume the emmer is from one of these.

<sup>7</sup> Kozłowski, *Bull. Acad. Sci. Cracovie*, 1920, 1-10b, 7 ff.

<sup>8</sup> *BAUB.* x, p. 192; xi, p. 308.

<sup>9</sup> *BUF.* iv (1924), pp. 13 ff.

<sup>10</sup> *AfA*. xii (1913), p. 50; *MAGW.*

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Attersee and Mondsee<sup>1</sup> we meet the following 'Danordic' types:

Rather tall 'funnel-necked beakers', and pots with arcaded plastic ornament.

Polygonal stone battle-axes; spheroid maces.

Flint arrow-heads in profusion.

Crescent-shaped flint sickles.

An abundance of horn implements including bored axes and mattocks.

Whorls and loom weights of clay.

Clay models of animals (Austrian lakes).

*Peculiarities of pottery* The associated pottery has, however, marked peculiarities. The ware is generally coarse and gritty. Among the stranger shapes from Altheim we should note deep bowls with two string-hole lugs set close together as in the Globular Amphorae group, biconical jugs with a strap handle starting just below the rim, and biconical jars with four horizontal handles on the belly. A pot with a loop-handle inside across the neck, as in a basket, stands alone.

*Mondsee style* Some of these forms at least recur in the Mondsee, but the peculiarity here is in the decoration; the patterns, executed in the Danordic furrow technique, include rayed circles and analogous motives. Pottery of the same style recurs in the axefactory on the Upper Enns above Steyr,<sup>2</sup> and in the Salzburg district.

*Spheroid mace-heads* The spheroid stone mace-heads again, though not restricted to this group, are only common in the west of the Danordic province.

*Metal* Metal was commoner than farther east. From Altheim comes a flat celt of copper; the Austrian lakes have yielded in addition kite-shaped daggers with rivet-holes and a rudimentary midrib, fish hooks, and quadrangular awls. From the Mondsee came further a globe-headed pin of poor *bronze*.<sup>3</sup> Among the remains from the Attersee in Vienna are pins with swollen and perforated necks and leaf-shaped girdle-clasps, both seemingly Middle Bronze Age types.

*Local metal-lurgy* Some ladles from the Mondsee had undoubtedly been used for smelting copper. Grooved hammer stones, like Fig. 130

xlvi (1919), pp. 212 f.; li, pp. 34 ff., 195 ff.

<sup>1</sup> Franz, "Die Funde aus den prähistorischen Pfahlbauten im Mondsee",

*Mat. z. Urgesch. Österreichs*, iii (1927).

<sup>2</sup> WPZ. v, pp. 19 ff. A 'bronze' dagger was found here.

<sup>3</sup> Much, *Kupferzeit*.



from the same site, are likewise generally metal-workers' tools. A local metallurgical industry is thus attested. Whether it utilized local ores—which are abundant—is doubtful. A sample of copper on analysis was found to differ materially in its nickel content from the best known local ore exploited in prehistoric times.<sup>1</sup>

Marble buttons with V-perforation are characteristic of the Altheim-Mondsee group. *Buttons*

The chief peculiarity of the East Alpine complex as contrasted with the Danordic culture in general is the type of settlement. Altheim was a tiny, fortified hamlet on a hill overlooking the Isar. An area some 40 m. in diameter had been enclosed within a series of three concentric trenches separated by palisades of stakes and traversed by more than one causeway. The village had, nevertheless, been stormed and burned; sling-stones and used arrow-heads, mingled with broken human bones in the moats, bear witness to the stubbornness of the unavailing defence. The other land sites in Bavaria and Austria were similarly situated and probably also fortified. *Fortifications*

On the Attersee and Mondsee the villages were built on piles as on the Swiss lakes. No associated graves are known. *Pile villages*

The Mondsee villagers cultivated emmer and common wheat, barley, beans, and apples, but no 'flax'. Dogs, swine, cattle, sheep, and goats were domesticated. The Auhögel has yielded the bones of a small type of horse too. *Bones of horse*

We get the impression from the foregoing analysis that at Altheim and the Mondsee the Danordic culture has been superimposed upon a substratum to which, perhaps, fortifications and pile dwellings belong. In this substratum we shall learn in the next chapter to recognize epipalaeolithic elements blended with others that reappear in Aichbühl and Michelsberg. At the same time some of the patterns on the Mondsee pottery, with their close similarity to Laibach and Slavonian *motifs*, suggest the possibility that a cultural current from the south-east was already reaching the metalliferous regions where the sites cluster. Franz has very plausibly argued that the Austrian lake villages were stations for the export of copper by water to the Danube. In that case the Mondsee might have

<sup>1</sup> Kyrle in *MAGW.* xlii (1912), p. 206; and a flanged celt were found as well  
Cf. *JfA.* vi, p. 90. So at Hellbrunner as Bronze Age ware. *MAGW.* li,  
Hill near Salzburg 'chalcolithic' p. 35.  
pottery, and a polygonal battle-axe

become a secondary focus of civilization that would react on the development of Danordic culture farther east.

Unfortunately, the chronology of the group is very vague. The bronze pin from the Mondsee, and still more the pins and clasps from the sister lake,<sup>1</sup> warn us against assigning too high an antiquity to the group. It is certainly later than Period II. On account of the absence of obvious borrowings from the

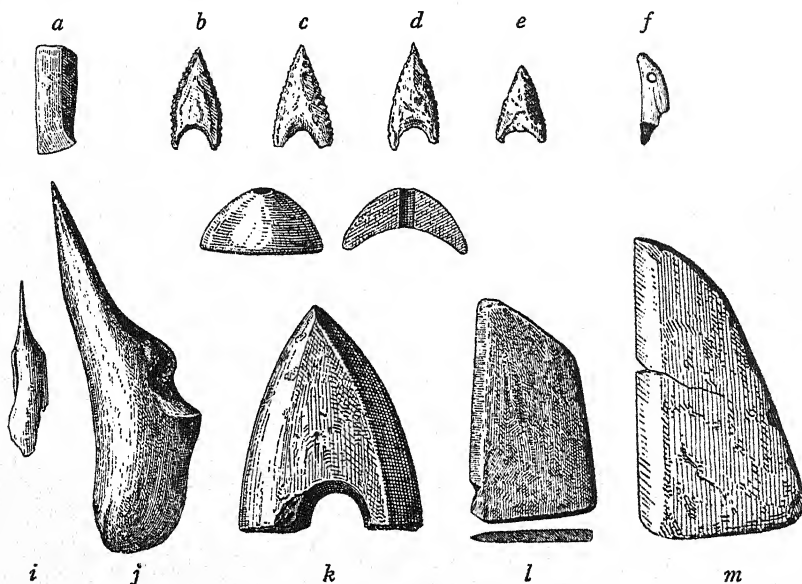


FIG. 79. Artifacts from Steinbruchhügel, near Kronstadt, after Teutsch.  $\frac{1}{2}$

Bell Beaker and Aunjetitz cultures which occupied the same area in Bavaria, Reinecke holds that the Altheim culture must be older than either. It would accordingly be contemporary with the Danordic cultures in Silesia.

*Transyl-*  
*vania* The still little-known hill-stations of Eastern Transylvania<sup>2</sup> again agree with the regular Nordic group in many points. The remains found on them correspond roughly with those in the strata covering the ruins of Erösd II. Hence they postdate the painted pottery in the same region. The pottery with furrowed decoration from caves and hill-stations in Western Transylvania<sup>3</sup> may belong to the same complex.

<sup>1</sup> But of course the position of these is not fixed stratigraphically; the settlements may have been inhabited as long as those on L. Neuchâtel, p. 169, below.

<sup>2</sup> *MAGW.* xxx, pp. 192 ff.; *MPK.* i, pp. 392 ff.

<sup>3</sup> Examples figured in *ZfE.* 1903, p. 456, figs. 36 ff.

Agreement with the Nordic cultures is evinced by the following traits:

Plastic and furrowed decoration on the pottery.

Stone battle-axes with knobbed butts.<sup>1</sup> (The copper axe-adze from Erösd belongs here too.)

Many stemless flint arrow-heads (Fig. 79b-e).

Sandstone knives (Fig. 79l-m).

Clay models of animals (probably rams) and also of axe-hammers (as at Stary Zámek). (Fig. 79a).

Abundant whorls (of precisely the Danordic hollow-cone type), and loom weights.

Peculiar, however, is the form of the plastic ornament on the pots which occasionally assumes spiraliform shapes resembling Prince of Wales' feathers. Sherds with cord ornament, too, apparently belong to this level. Among the forms were square-mouthed vases and cups with ribbon handles.

A cult object to which Stary Zámek offers possible parallels is the clay phallos. Curiously enough socketed ladles, a Danubian II type farther west, appear on the Alt first in this complex.<sup>2</sup>

Among the numerous horn and bone implements are fish-spears. Pendants were also made of bone.

The 'Nordic' culture marks a clean break with Danubian traditions.<sup>3</sup> *Summary*

Pastoralism is now the basis of life, and probably sheep are more important than kine or pigs. A reflex of this change is the appearance of the sheep-dog and perhaps the swift Asiatic horse (Auhögel). At the same time agriculture and hunting remain very important. Trade has probably risen to be of economic importance, and a certain industrial specialization may be inferred from the factory sites in the Austrian Alps.

A martial character is prominent, though not predominant. Besides weapons of the chase specialized arms (battle-axes) are manufactured which may also be badges of rank. The villages are small but sometimes occupied for a long time. Fortifications may be an accidental trait on the western frontier.

The cult of the mother goddess has disappeared completely, but models of animals (rams) and other objects may have a ritual significance. Burial rites vary—in the north-east contracted interment in stone-lined trenches, in the south-east the

<sup>1</sup> MPK. I. c., fig. 167. The grooved decoration is curious.

<sup>2</sup> Teutsch in *Jb. Bärzenländ. Mus.* i, p. 116.

<sup>3</sup> László has pointed out in *Dacia*, i, p. 3, certain elements of continuity with Erösd.

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burial of cremated remains under a barrow prevail. In each case the tomb is individual, and well furnished with arms, ornaments, and vessels.

Art is purely geometric, and aims at contrasts obtained by mouldings or furrowed decoration.

Weaving and pottery flourish. Metal is used everywhere occasionally and worked at least on the Alpine fringe. Its influence on stonework is betrayed by the flat stone celts with squared small sides and perhaps by the battle-axes. The stone-borer now certainly uses the hollow drill. Flint, as well as rock, is used for the manufacture of axe-heads.

The distinctive tools are the flat celt of stone, flint, or copper, the perforated axe-hammer with rounded butts, the crescent-shaped sickle of flint or stone, horn axes and picks, and bone awls.

The bow, the sling, and the stone battle-axe (in the Alpine and Bohemia area, also the mace) serve as weapons.

Amber beads, bored tusks, and copper rings are worn as ornaments.

Rectangular houses and pit-dwellings are alike inhabited.

The pots are everywhere provided with handles, and the vessels show a well marked distinction between neck and body. Leading forms are the collared flask, the funnel-necked beaker, the amphora with handles at the base of the neck, and piriform or biconical jars with handles low down on the shoulder or even on the belly.

Few of these traits are attested for the whole area of the Danordic culture. It may well be that our complex is really the resultant of several distinct but continuously interrelated cultures. The isolation of these cannot, however, be satisfactorily achieved on the data now at our disposal. But we may at least recognize that our 'culture' may have more than one origin: it is indeed essentially a complex.

*Origin* If we analyse the 'Nordic' culture, we find in the first place elements derived from the previous epoch. As before settlements are concentrated on the löss in Silesia and Galicia; the axe-hammers, the horn hammers, the clay plastic, the technique of the pottery, the furrowed (Rössen) and plastic (Puszta Istvánháza) ornaments, all have precursors in Danubian II or late Danubian I contexts. True handles again were introduced with Danubian II. Even such ceramic forms as the funnel-necked beaker may be derived from dishes like Fig. 40, 2. A counterpart to the Danubian survivals in the Upper Danube-

*Danubian  
survivals*

Oder-Elbe basins is provided by survivals from the Erösd culture—horn fish-spears, clay plastic, &c.—in Transylvania. We must thus admit a large survival of truly Danubian elements.

Stocký, indeed, goes so far as to treat the Danordic culture as essentially a development of Danubian II; the great change in the manner of life which we have recorded would be due primarily to climatic events.<sup>1</sup> The great floods that interrupted the growing dryness during the early centuries of the Subboreal epoch would have driven the peasants from the valleys to the uplands that were now apt to serve as pastures. Contact with the Corded Ware folk would accelerate the change in manner of life.

But many 'Danordic' traits recur in Scandinavia in the Dolmen Period; such are the flint celt, the polygonal battle-axe, the use of amber, the funnel-necked beaker, the collared flask, and the amphora, probably also the cultivation of emmer. Other features of the Scandinavian culture are indeed missing—megalithic architecture, collective burial, the transverse arrow-head. Moreover, the collared-flask pottery is accompanied by the thin-butted celts of Montelius' period 2 in Denmark, by thick-butted types of Montelius' period 3 in Silesia. Scandinavian parallels

Kossinna<sup>2</sup> and his school explain the agreements with Denmark by postulating an emigration thence at the end of the Dolmen Period. The migrant hordes would have proceeded up the Vistula to Torún and thence across Poznań to the Upper Oder. There they would have divided, moving some into Galicia, some across Bohemia into Thuringia. The landmarks of this movement would of course be primarily the collared-flasks and kindred vases, and secondly the flint celts. Dependence on Denmark

The recognition of the Danubian survivals in the Danordic complex<sup>3</sup> of course disposes of the view that it is just an extension southward of Scandinavian culture. Even the view that Scandinavia supplied the new factor that differentiates the 'Danordic' from the Danubian cultures can only be admitted with reserve; for the genesis of those elements in the Dolmen civilization of Denmark that are common to it and our complex requires explanation. Except perhaps for the emmer, none of them belong to the western province from which the idea of

<sup>1</sup> PZČ., p. 151.

<sup>2</sup> *Mannus*, i; DV. &c. The idea of deriving our 'Nordic' culture from that of the North-West German megalithic graves advanced in *Mannus*, i-ii, has been definitely abandoned in *Man-*

*nus*, xiii.

<sup>3</sup> Note that in North Germany (Brandenburg) many of our Nordic forms (amphorae, &c.) are attributed by Sprockhoff to southern influence (*op. cit.*, pp. 116 ff.).

the dolmen was immediately derived. In fact, as is well known, Sophus Müller<sup>1</sup> reverses Kossinna's process, and derives the Danish collared flasks, &c., from the south-east.

*Eastern  
elements*

As a matter of fact, there are specifically eastern elements in our complex and those of a vital character. The pastoralism that characterizes the Nordic culture in so high a degree is really proper to the steppes of the east. The sheep-dog and the small Asiatic horse were bred or tamed very early at Anau. The battle-axe is a very ancient Mesopotamian weapon; it early crossed the Caucasus, assuming a form that might well be the model for the 'Nordic' stone battle-axe. The flint sickles are most numerous on the Upper Bug on the eastern frontiers of Poland, and might be derived from the Mesopotamian copper sickles. In the same region a 'Campignyan' culture using flint axes<sup>2</sup> flourished for a long time. The collared flask can be paralleled in metal on the Kuban; the funnel-necked beaker and the amphora<sup>3</sup> in the Tripolye culture of the Ukraine and Galicia.<sup>4</sup>

It would therefore be tempting to postulate a wave of pastoralists coming in from South Russia and mixing alike with the earlier inhabitants of Denmark and Central Europe and even Transylvania. These might be identified with the Corded Ware folk described in the next chapter.<sup>5</sup>

*Aegean  
influence*

At the same time southern and western traits are detectable. As Stocký<sup>6</sup> rightly says, 'influences from the south-east had not ceased' in Period III. Eloquent testimony to the maintenance of intercourse with the Mediterranean is indeed supplied by the *Pectunculus* shells from Danordic settlements and no less by the copper objects and their imitations. Indeed, the whole ceramic group represented by Menghin's Baden type has south-eastern affinities. The fluted decoration has a long history on the Middle Danube from Vinča I onwards. We shall meet tunnel-handles again in Carniola and Bosnia together with curvilinear motives that appear in Starý Zámek I b. The roughened jars have parallels to Tószeg and Ó Bessenlyö. But the high-handled cups above all have unmistakable affinities in the metal work and pottery of Troy II. And spools pre-

<sup>1</sup> *MSAN.* 1913-14, pp. 64, 100 ff.

<sup>2</sup> *Młodsza*, pp. 82, 156; *L'Anthr.* xxxvi (1926), pp. 65 f.

<sup>3</sup> Antoniewicz (*WA.* ix, p. 245) notes these similarities as evidence for Nordic influence on the painted pottery.

<sup>4</sup> Stocký (*Nied. Sb.*, p. 212) would

derive the 'drum' from the same quarter. Sprockhoff, *Mark-Brandenburg*, p. 9, suggests that the southern 'funnel-necked beakers' may be derived from Michelsberg types.

<sup>5</sup> Cf. p. 131, note 1.

<sup>6</sup> *PZČ.*, p. 149.



cisely like those from Silesia, Moravia, and Transylvania come from the same city.<sup>1</sup> All this denotes a continuance of that trade along the Danube that created Danubian II and its extension towards the tin lodes of Bohemia. In a later chapter we must consider whether that traffic did not also reach the copper bearing mountains of the Austrian Alps.

Several traits are shared by the Danordic culture with the Remedello culture of Upper Italy—notably tunnel-handles, battle-axes with knobbed butts, copper flat celts, and awls and bored horn axes. For the Altheim-Mondsee group the list might be extended by the addition of copper daggers, spheroid mace-heads, and buttons with V-perforation. The agreement suffices to prove contact with the lands round the head of the Adriatic, but the influences were mutual. If the daggers and perhaps the mace-heads reached Austria from Italy,<sup>2</sup> the perforated horn and bone axes certainly travelled in the opposite direction.

Finally, we should recall that the Nordic culture in Poland embraced within its bounds the haunts of epipalaeolithic survivors. Such must have been incorporated within it. Indeed, Kozłowski makes them the bearers of the Great Polish culture which would only have borrowed certain elements from Scandinavia.

On the whole the Nordic culture seems to have acquired its individuality through the superposition of a pastoralist layer upon various autochthonous groups. Differences in the substratum account for the diversities in the several areas. But these diversities were accentuated by external relations with the Lower Danube and Upper Italy respectively.

### III. THE WALTERNIENBURG-BERNBURG GROUP

Distinct from the 'Danordic' culture of the Oder-March-Vistula basins was the civilization characterized by the Walternienburg and Bernburg pottery. It evolved on the Elbe and Saale, parallel to and in contact with the Danordic culture farther east. Five typological phases are recognized by Niklassen<sup>3</sup> whose monumental monograph we shall follow in the description of the material.

<sup>1</sup> SS., No. 8439.

<sup>2</sup> They come in the last resort from Crete; on the Middle Danube apart from Cypriote types daggers are rare, so that the Danube route may be

excluded.

<sup>3</sup> *JST.* xiii. In the sequel the numbers in brackets after a site refer to Niklassen's inventory.

*Pottery* The pottery is well fired and smooth. The forms at all periods favour angular outlines, but the sharpness of the profile is softened down in the later phases.

The five stages of development are termed by Niklassen Walternienburg I and II and Bernburg I (III), II (IV), and III (V) respectively. The original Walternienburg I forms are (i) a cup with band handle, the body being divided abruptly into neck, shoulder, and inverted-conical base (Fig. 80b), (ii) a hanging vase divided in the same manner as the cup (Fig. 80a), (iii) a cone-shaped dish with lug handles under the brim. By the gradual suppression of the shoulder and softening down of the profile the cup becomes oval or even cylindrical in phases IV and V (Figs. 80c-e). A collar on some late Bernburg cups represents the last survival of the shoulder. The hanging vase undergoes a similar process, becoming simply biconical and disappearing before phase V.

In Walternienburg II twin cups with the single band-handle attached at the junction of the two compartments appear and last to phase IV. In phase II the 'drum' (Fig. 84b) was taken over by the Walternienburg culture from the Danordic intruders and became acclimatized in Thuringia.<sup>1</sup> To the same epoch belong curious boat shaped 'pocket-vases' not unlike those of the Eberstadt style farther west.<sup>2</sup> The early Walternienburg forms are clearly influenced by basket-work originals—the handles in particular are really basket handles in contradistinction to the metallic handles of Danubian culture.

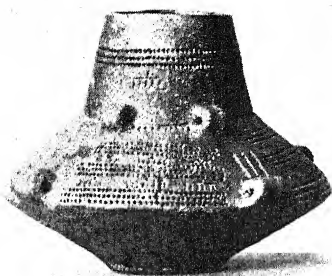
*Ornamen-  
tation* The decoration, too, is inspired by basketry designs.<sup>3</sup> It is always executed by means of a sharp instrument. In the earlier phases this was jabbed into the clay to produce a furrow. In phase I the motives are grouped vertically, while later a strictly horizontal arrangement was adopted; in Walternienburg I, moreover, M figures and 'pectiform' signs are prominent; later horizontal bands of straight or zigzag lines alone were used. The 'drums' are ornamented with rayed disks, crosses, and other symbols doubtless of ritual significance.

*Celts* In all phases the typical implement associated with this culture was a small polished celt of rectangular cross-section made of Wida shale. The material is found in nature on the north

<sup>1</sup> Schoetensack, *ZfE.* xxv (1893), p. 165, cites African parallels to show that these curious tubular vessels were used as drums, the handles serving to receive the strings used to keep the covering skin taut. At Hornsommern

the 'drum' covered a child's skeleton.  
<sup>2</sup> Kossinna, *DV.*, pl. LII, fig. 462; *Mannus, Ergänzungsband.* iv, pp. 52-4, and p. 38, figs. 2-3.

<sup>3</sup> Schuchhardt, *PZ.* i, pp. 45 ff.



*a*



*b*



*c*



*e*



*d*



*f*



*g*



*h*

FIG. 80. Walternienberg-Bernburg vases. M. Halle. *a* and *b*  $\frac{1}{5}$ ;  
*c*  $\frac{1}{5}$ , *d*  $\frac{1}{8}$ , *e*  $\frac{1}{5}$ , *f*  $\frac{1}{4}$



slopes of the Hartz. Horn sockets and sleeves were found in the settlement of Nägelstedt where, however, the pottery attests the presence of Rössen and Danordic as well as Bernburg cultures. Small double-bladed stone axes (Fig. 81), resembling small versions of the Danish Passage Grave form, belong probably to an early phase. The commonest arrow-head is, as in Danish Passage Graves, the transverse type, but tanged and triangular flint tips and bone points sharpened at both ends<sup>1</sup> also occur. Wida and other shales were also ground into knives.<sup>2</sup> Metal is represented only by tubes of copper leaf, the exact age of which is vague.

The most important ornaments are the amber beads. These took the form of a miniature double-axe (at Schortewitz (69))

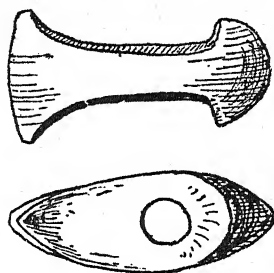


FIG. 81. Stone battle-axe, Walternienburg, after JST.  $\frac{1}{4}$

in phase II) or of a double hammer (at Nietleben<sup>3</sup>) exactly as in early Danish Passage Graves. Slate pendants, bored teeth, and bears' claws were also worn as well as bone pins with perforated heads.

The dwelling places are generally marked by shallow round or oval hut-foundations, but at Schrapplau (96) the outline of a rectangular house, excavated 15 cm. in the soil and  $4.2 \times 3$  m<sup>2</sup>. in area, was traceable.

The authors of this culture were buried either in separate graves or in collective tombs of megalithic or semi-megalithic construction. Trench-graves with contracted skeletons are met from one end of the province to the other and often, as at Walternienburg itself, constitute large cemeteries in which all ceramic phases are represented. The collective tombs do not seem so ancient. Apart from one subterranean chamber containing forty skeletons and a fragmentary cup of the first phase,

<sup>1</sup> Quedlinburg (30), *l. c.*, fig. 22, 12.

<sup>2</sup> *MAGW.* lvii, p. (90).

<sup>3</sup> Krause, *Deutsche Altertumskunde*, ii, pl. iv.

*Cists* at Holzussra,<sup>1</sup> the earliest pottery found in collective tombs is classed by Niklassen as Walternienburg II. The majority of the tombs are cists, buried under a barrow or sunk in the earth. The chambers are never very big; the largest, containing

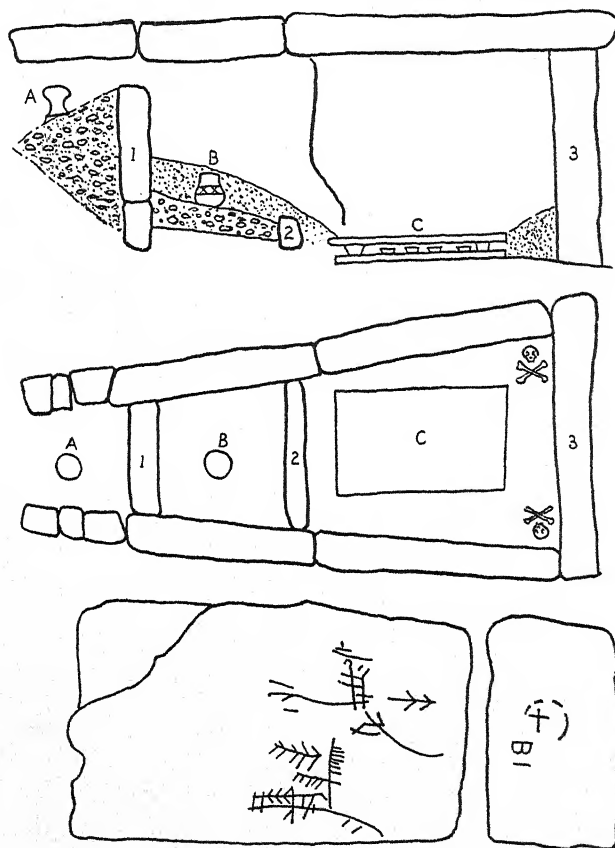


FIG. 82. Cist grave with sculptured slabs, Nietleben, after Kruse.  $\frac{1}{50}$

Bernburg II-III<sup>2</sup> pottery, measured  $6 \times 2.3$  m<sup>2</sup>. The cists are often divided into compartments by transverse slabs<sup>3</sup> that either produce a double chamber, or merely divide the tomb proper from a small antechamber,<sup>4</sup> exactly as in the regular Long Cists of Scandinavia or the Covered Galleries of the Seine area. In one double cist at Baalberg the partition was pierced with a round hole, as in some cists with Corded Ware,

<sup>1</sup> Niklassen, *l.c.*, p. 109.

<sup>2</sup> Schiepzig near Halle (104).

<sup>3</sup> As at Nietleben or Baalberg.

<sup>4</sup> Schortewitz (70).



but one chamber in this tomb contained globular amphorae. Finally, in two cists<sup>1</sup> one of the upright slabs had been carved with geometric signs, a phenomenon encountered also in cists with Corded Ware in the same region (Fig. 82). The majority of the cists in the Saale valley are built of comparatively thin slabs and resemble the tombs of Montelius's period 4 in Sweden. Still a large tomb at Drosa in Anhalt (Fig. 83), containing pottery of the second and all later phases, corresponds exactly to a sort of passage grave. Some of the tombs built of huge blocks in the Altmark, also contained Walternienburg-Bernburg ware.

*Passage  
grave*

The culture just described occupied the Saale-Elbe valley from the Havel to the Unstrut, all phases being evenly distributed

*Distribu-  
tion*

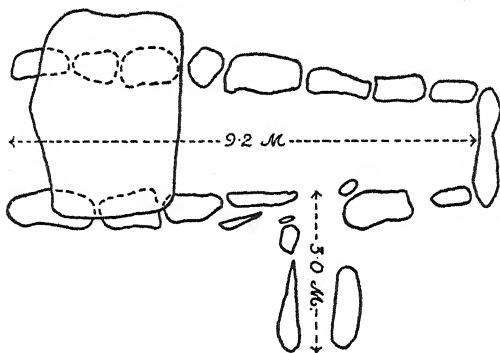


FIG. 83. Plan of passage grave, Drosa, after JST.

tributed over this area. The later phases—Bernburg II and III—are also represented in Bohemia.<sup>2</sup>

The Walternienburg culture is closely related to those of Scandinavia and North Germany.<sup>3</sup> Common to all three groups are megalithic sepulchral architecture, transverse arrow-heads, double-bladed battle-axes, axe-shaped amber beads, and 'basket' vases with angular profiles.

In its economy the Walternienburg culture combined agriculture, pastoralism, and hunting; trade or barter was carried on with the north; warlike traits are not very pronounced. Burial rites are exceptionally diversified, as both collective and individual interment was practised. The 'drum' may be recognized as a cult object. Art is geometric and uses skeuomorphic

*Summary*

<sup>1</sup> Nietleben near Halle and Schkoppau near Merseburg.

*PZČ.*, pp. 100 and 147.

<sup>3</sup> Cf. Sprockhoff, *Mark Brand.*, p. 29.

<sup>2</sup> Bylan, Pič, i, p. 110, and Stocký,

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patterns. Weaving is attested, but metal was not used industrially.

The leading archaeological traits are thick-butted shale celts, sometimes hafted in horn sleeves, and shale knives as tools, the bow and transversely tipped arrow and, as an accident, the double battle-axe of stone as weapons, bored tusks and imported amber beads as ornaments.

*Origin* The traits just enumerated all serve to connect the Walternienburg complex with the megalithic cultures of North-West Germany and Scandinavia, though many of the most vital analogies are seemingly accidental in our group. There is further a considerable degree of agreement in the pottery. It would therefore be natural to regard our culture as derived directly from one of the more northerly groups.

*Scandinavia and N.W. Germany*

*Megaliths* The distribution of thin- and thick-butted celts of Danish type shows a real expansion southward and inland of the northern culture. A map of megalithic tombs tells the same tale. The tomb at Drosa in Anhalt is identical in plan with one at Drouwen (Drenthe) in Holland which contained thick- and thin-butted celts.<sup>1</sup>

However, Drosa is the southernmost tomb of true northern type. The cists<sup>2</sup> of slabs, though certainly contemporary with the 'passage-grave' of Drosa, represents a distinct Central German tradition, albeit inspired by similar aims. Indeed, the new style of architecture spread northward at least to Brandenburg,<sup>3</sup> and perhaps reveals the origin of the Scandinavian cists of Montelius's period 4. Moreover, the more usual type of grave was the simple trench and not the collective tomb at all. These considerations alone suffice to differentiate the Walternienburg culture from the Northern Megalithic.

The pottery, too, of the several groups is distinct. The collared flasks and funnel-necked beakers that are found in the megalithic tombs of the North Sea coasts are not associated with the Walternienburg group. The latter's pottery approximates more closely to that of the Danish passage graves,<sup>4</sup> but is far from identical therewith. Hence Niklassen concludes that

<sup>1</sup> Aberg, *Niederland*, p. 30.

<sup>2</sup> Cf. the Walternienburg I vases from Wormsleben and Holzussra; in no case can the Central German cists be synchronized with the Scandinavian. They correspond rather to an earlier part of the Scandinavian passage grave epoch as beads and axes prove.

<sup>3</sup> Sprockhoff, *op. cit.*, p. 5.

The nearest parallels to Walternienburg I pottery belong to S. Müller's 'Grand Style' (*Sten. Kunst*, Nos. 103, 116, and 119), but similar forms occur later in the *Cardium* technique (*ibid.* 122 and 128), and even in the first phase of decadence (*ibid.* 146-9).

the Danish and the Central German cultures represent distinct branches of one common trunk, not yet identified. Shall we say it was created by descendants of epipalaeolithic men on the Lower Saale, stimulated by contact with the megalith-builders? The horn sleeves provide an interesting link with epipalaeolithic times, and we remember that a pottery based on rush-baskets is found with 'epipalaeolithic' flints in Brandenburg.

Chronologically the Walternienburg culture should be parallel to the Danordic culture on the Oder. It had already passed through one phase of evolution before the Danordic drum reached it.<sup>1</sup> On the other hand, its relation locally to Danubian I is curious. In a settlement at Lössau spiral-maeander sherds of *the latest style* were found in an apparently undisturbed deposit at a higher level than Bernburg I pottery.<sup>2</sup> Kossinna and Bärthold had always regarded spiral-maeander ware as the oldest pottery of the Saale valley. But a survival of Danubian I elements into Period III is not inconceivable though certainly surprising. In any case the evolution of the Walternienburg style must have been comparatively rapid in view of the uniformity of the implements. In Period IV only reminiscences of Bernburg forms are observable in the Aunjetitz or proto-Aunjetitz pottery both of Thuringia and Moravia.<sup>3</sup>

*Chronology*

#### IV. THE GLOBULAR AMPHORA

Another Central German group, akin to the foregoing, is that named after its most distinctive ceramic form, the Globular Amphora (Kugelamphora). The culture is known chiefly from grave-finds, and looks like the work of a tribe of armed traders who roamed from the Caucasus to the Baltic with wares in one hand and weapons in the other.

The distinctive vase is the amphora with short, cylindrical neck, globular body, and two small handles (Fig. 85). East of the Oder vases of similar form, but with a flattened base and often four handles, may replace the amphora. A regular associate of the amphora is the large bowl with distinct neck and two lug-handles, always set side by side (Fig. 85 d).

*Pottery*

Decoration, when present, is executed with a pointed instrument, with a *Cardium* shell, with a stamp, or, rarely, with a cord. The ornament is arranged in horizontal bands round the neck, supplemented in the amphora by fillets hanging

<sup>1</sup> Niklassen, *op. cit.*, pp. 141 and 163. in *Mannus-Bibl.* 22; Cerny, *WPZ.* iii.

<sup>2</sup> *Ibid.*, p. 178, and *Mannus*, xvi, p. 237. p. 31; v, p. 52.

<sup>3</sup> Niklassen, *op. cit.*, p. 154; Winkler,

down over the shoulder. The favourite patterns<sup>1</sup> are rows of triangles or lozenges, incised or hatched, or composed of U- or V-shaped stamp-impressions or dots. In a few instances the hatchings have been produced by rolling a stick, wrapped round with a cord, over the soft clay.

*Celts* A regular accompaniment of these vases in the tombs is a small, well-polished flint celt of thick-butted type. In several cases<sup>2</sup> banded flint has been used which, according to Kossinna, was imported from Galicia.<sup>3</sup>

*Ornaments* Another regular element in the grave furniture is amber, generally in the form of large beads, but at Remlin in Mecklenburg<sup>4</sup> the bead was in the shape of a double-axe as in Danish passage graves. The same substance is found with globular amphorae as far from its source on the Baltic as Bohemia<sup>5</sup> and Eastern Galicia.<sup>6</sup> In two tombs boars' tusks were met, and bone beads in others. A copper spiral adorned the corpse in at least two cases.<sup>7</sup> The remarkable bone girdle-clasps from a tomb at Czarnakońce near Husiatyn, East Galicia, probably belonged to this culture.

*Houses* Settlements of the folk who used these amphorae are rare. The majority come from Bohemia where they are always on high places commanding the rivers. It looks as if they were trading posts<sup>8</sup> or the settlements of robbers, dominating the commercial routes. The important settlement at Kostelec on the Elbe contained no foreign pottery.<sup>9</sup> The three globular amphorae were found in a pit-dwelling of the usual type. Elsewhere fragments of globular amphorae are associated with remains of other pottery; at Řivnáč<sup>10</sup> near Prague, Bernburg pottery, an *ansa lunata* fragment, a phalange whistle, and boars' tusks were the most notable objects. At Kamýk<sup>11</sup> a fragment of an amphora occurred in a late Danordic settlement, with high-handled cups like Fig. 77, warted ware cups, striated ware, and a stone knife. Finally, at Günthersdorf near Leipzig a fragment of an amphora was found in a hut containing Danubian I a and b sherds.<sup>12</sup>

<sup>1</sup> Tabulated by Stocký, *Nied. Sb.*, p. 207; Sprockhoff, *op. cit.*, pls. 36-7.  
<sup>2</sup> Börtewitz in the State of Saxony, Gross-Kreuz (Brandenburg), and at several sites in Poland.

<sup>3</sup> *Mannus*, ix, p. 144; cf. Kostrzewski, *Real.* v, p. 182.

<sup>4</sup> Beltz, p. 117.

<sup>5</sup> *Nied. Sb.*, p. 211.

<sup>6</sup> Kozłowski, *Metoda*, p. 186, no. 7.

<sup>7</sup> Kalsbrieth (Saxe-Weimar), and Gr.-Quenstedt near Halberstadt.

<sup>8</sup> So Stocký, *Pr. Pr.*, p. 29.

<sup>9</sup> *PA.* 1909, and pl. 45; *PZČ.*, pl. LXXXII; cf. *Pravěk*, 1910, pl. XII (Šarka near Prague).

<sup>10</sup> Both finds noted at Prague. Stocký, *PZČ.*, pl. LXXXV.

<sup>11</sup> Näbe, pp. 12 ff. and pl. II, 7.



FIG. 84. Jugs and drum, Opperschöner Mark. M. Halle.  $\frac{1}{4}$

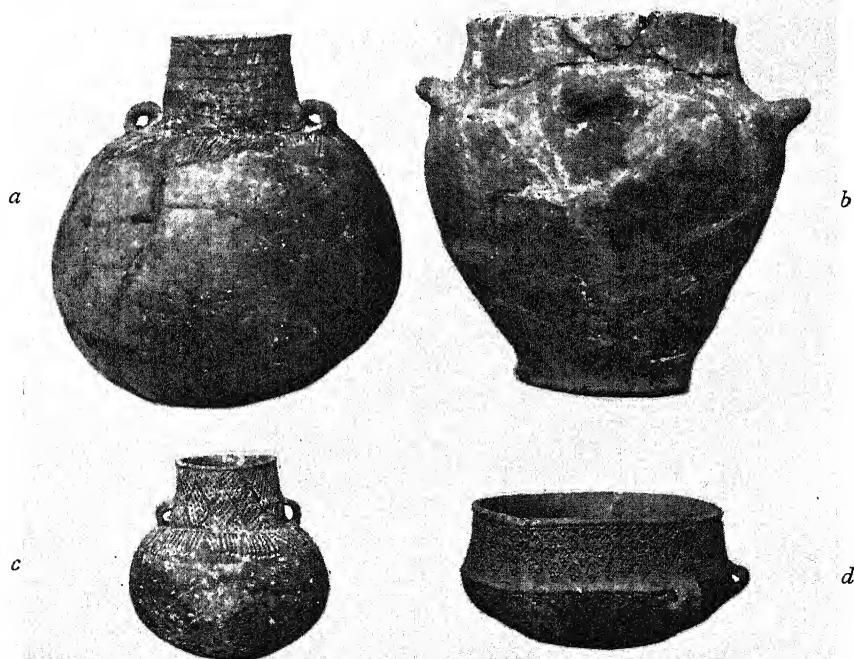
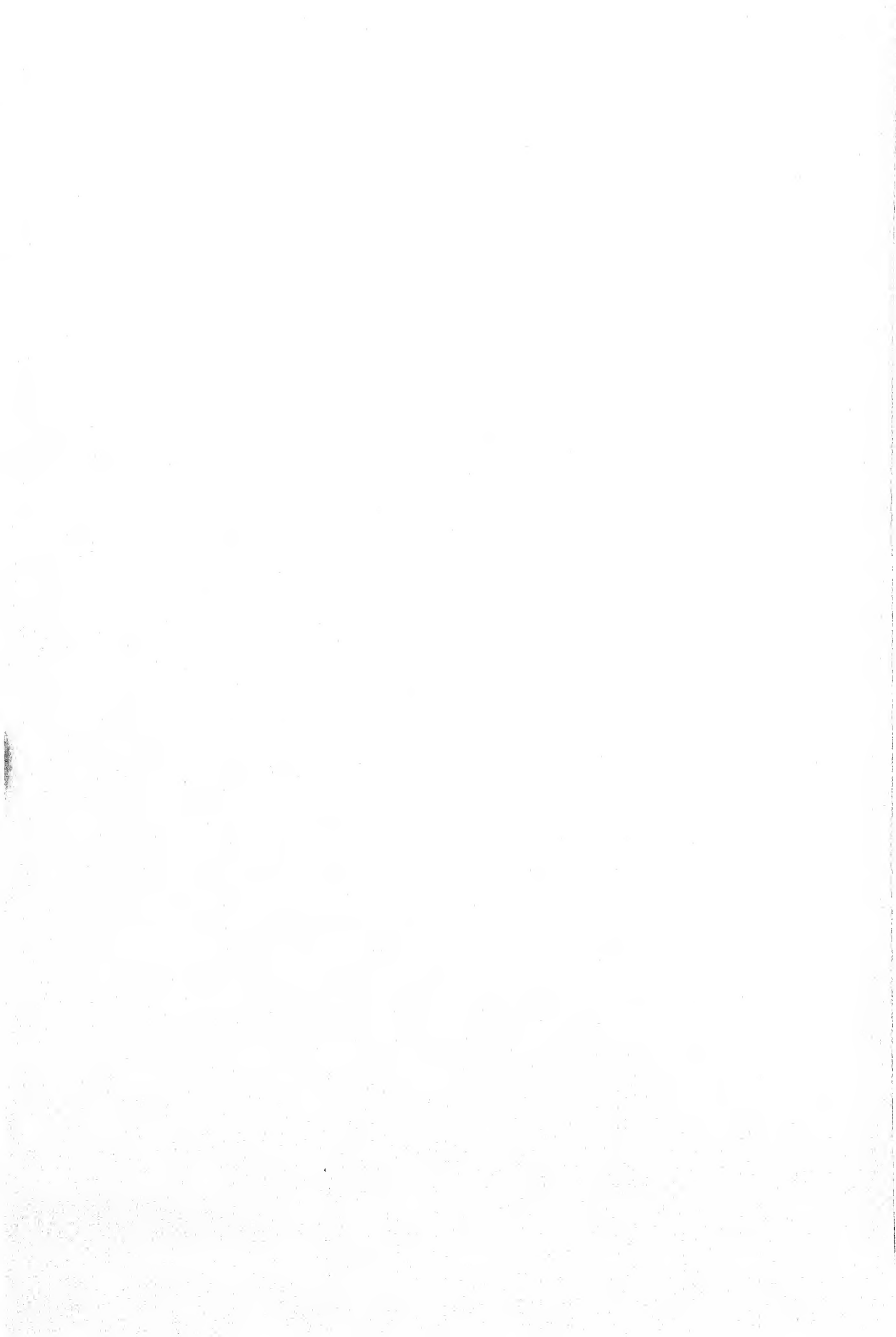


FIG. 85. Globular amphorae, Sollichau. M. Halle.  $\frac{1}{11}$





We are better documented on burial rites of this folk.<sup>1</sup> The users of globular amphorae were generally buried in subterranean cists of big stone blocks or thin slabs. The cists are generally quite small, measuring on an average  $1.40 \times 1.10$  m<sup>2</sup> inside, but they usually contained several skeletons though probably five is a maximum number. In Brandenburg these cists were sometimes erected above the ground. One large one ( $6 \times 1.8$ ) was surrounded by big stones and corresponds to the typical North German 'Hunnenbett'.<sup>2</sup> At Baalberg the cist was divided by a port-hole slab into two compartments (cf. p. 136 above). Finally, in Poznań globular amphorae are met in Kujavish graves<sup>3</sup> at Rzeszynek and elsewhere. But nowhere was collective interment the sole rite; flat graves in the bare earth are almost as common. In Bohemia the globular amphorae are met exclusively in trench-graves, and nine graves in Brandenburg<sup>4</sup> were likewise in the free earth. In such cases, and in some at least of the cists, the body was laid to rest contracted, but at Hoppenrade in Osthavelland the bones are said to have been burnt. The skulls from some inhumation graves in Germany have been examined by Schliz. The majority were dolichocephalic, some being described as cocoon-shaped, while others are compared to the type associated with corded ware. One from Ketzin, however, had an index of 86.75.<sup>5</sup>

The vast majority of globular amphorae have been found along the Saale and Elbe, but the culture spread sporadically as far north as the Uckermark and Pomerania.<sup>6</sup> The southernmost finds lie south of Prague. The distribution of the culture to the east was much greater. Quite typical vases occur in Eastern Galicia<sup>7</sup> with flint celts of rectangular cross-section, and a flat-bottomed variant with characteristic U-stamp decoration is met even in Volhynia. But that is not the limit. In shape and in the style of their decoration some vases from two 'dolmens' near Tsarevskaya<sup>8</sup> in the Kuban closely resemble Central German types. Since the 'dolmens' containing them were each divided into two by port-hole slabs, precisely as the cist at Baalberg on the Saale, this resemblance cannot be accidental.

Chronologically the globular amphorae occupy a relatively late position in Period III, since they are associated with Bernburg pottery of late styles.

<sup>1</sup> See especially Sprockhoff, pp. 85 ff.

<sup>2</sup> Beltz, pl. 17, 158, and p. 117.

<sup>3</sup> Dawn, fig. 110.

<sup>4</sup> Sprockhoff, p. 84.

<sup>5</sup> AfA. ix, p. 211.

<sup>6</sup> Gr. Ramin nr. Belgrade, *Lemke-Festschrift*, fig. 8.

<sup>7</sup> Kozłowski, *l.c.*, xxv. 8, 11; Åberg, *Nordic*, figs. 316-17.

<sup>8</sup> Dawn, figs. 62-3.

Graves

Cists

Trench-graves

Crema-tion

Distribu-tion

*Summary* The globular-amphorae complex differs from those hitherto described in that trade or robbery lies at its very basis. Apart from hunting no other economic activity can be detected.

The social unit must have been of minimal size—perhaps not larger than a single family group—but the individual was always prepared for battle.

In the disposal of the dead separate interment is the rule, but megalithic chambers are occasionally employed as the resting-places for a plurality of corpses. A possibly accidental feature is the port-hole stone entry. Plastic art is absent. Neither weaving, metallurgy, nor stone-boring were practised.

The distinctive tool and weapon is the thick-butted flint celt, the characteristic ornament amber beads. The pottery seems to imitate leather forms.

*Origin* On the classical German theory the culture thus defined is a branch of the megalithic culture of Scandinavia, specialized in North-East Germany. To Kossinna its spread was due to a second wave of Indogerman emigration from Denmark. Two characteristic traits—the flint celts and the amber beads—belong to the Scandinavian complex. Moreover, it is theoretically possible to connect the eponymous vase itself with the long-necked amphora of the Danish dolmens, intermediate stages being represented in Uckermark.

Åberg<sup>1</sup> and Menghin<sup>2</sup> accept this view, but Niklassen,<sup>3</sup> Sprockhoff,<sup>4</sup> and Stocký<sup>5</sup> have pointed out the impossibility of deriving our globular amphorae from those of the dolmens. The first-named considers that the form is based on bladder vessels.

The issue is complicated by the port-hole slab in the Baalberg tomb. On Elliot Smith's typology the holed stone is a reminiscence of the false door in the Egyptian *mastaba* and should therefore be a mark of antiquity. The device occurs in isolated tombs or in small groups in the Western Mediterranean, South Spain, South France, the West of England, in the Seine-Oise-Marne basin, and in Sweden. It is common in Thuringia and again in the Caucasus. The author has proposed<sup>6</sup> to bring the holed stone and the globular amphora from South Russia, relying especially on the correspondence between the Baalberg tomb and its furniture and those of Tsarevskaya. The Saale would then have been a secondary centre.

<sup>1</sup> *Nordic*, p. 170.

<sup>2</sup> *Urgeschichte*, p. 748.

<sup>3</sup> *JST.* xiii, p. 118.

<sup>4</sup> *Mark Brand.*, pp. 83 ff.

<sup>5</sup> *Nied. Sb.*, p. 212.

<sup>6</sup> *Dawn*, p. 234.

It is, however, possible that the culture under discussion, like the Walternienburg, originated in Central Germany as a result of an interaction between native epipalaeolithic elements and traders sailing up the Elbe and Saale. There are important deposits of salt in the Saale that have given their names to the river and to Halle. There is also copper near Halle, and tin near the head waters of the Saale.<sup>1</sup> The Elbe would be as navigable for prehistoric mariners as the Danube, and offered an attractive waterway to any one who had reached the North Sea coasts. Perhaps, therefore, in Central Germany the phenomena observable in Denmark were repeated, and early voyagers bringing with them the megalithic culture settled down among savage natives. The process of colonization might have begun already in the Dolmen period of Scandinavia—our Period II. The early rise of cultures parallel to, but not derived from, the Scandinavian would thus become intelligible. The rise of the group using globular amphorae would be but one episode in this process.

The future will decide which of these theories is the best grounded. The one solid fact is the growth along the Saale valley of a series of vigorous cultures<sup>2</sup> distinct both from Danubian and Scandinavian.

West of the Saale valley megalithic graves are rare in South and Central Germany. In Hesse there is a small group near Fulda. The tomb at Zuschen was a subterranean cist 20 m. long, with a port-hole entry and surmounted by a barrow. It contained numerous skeletons, two collared flasks, thick-butted celts, and, quite near the top of the deposit, bits of bronze. Some of the slabs were ornamented with engravings, representing apparently extremely conventionalized human figures. A smaller cist nearby at Fritzlar was only 3 m. long, but was divided into three compartments. One of these contained a late corded beaker and a sort of shoe-last celt.

Still farther west, near Giessen in the Wetterau,<sup>3</sup> some ruinous megaliths are known. Inside one were cremation graves with late Danubian I pottery such as are common in the Wetterau. We can only guess as to the origin of the builders of these tombs. Did they come from the Saale or up the Weser

*Rhenish  
analogues*

<sup>1</sup> But the copper can hardly have been accessible, and the tin lodes on this side are shrouded in dense forest.

<sup>2</sup> The foregoing paragraphs are far from exhausting these. There are still the Schönfeld type, a small local

group north of our province (*PZ.* ii, pp. 45, 341; xiii-xiv, pp. 158 ff.; Åberg, *Nordic*, p. 148; Menghin, *Urgesch.*, p. 753), and several others.

<sup>3</sup> *PZ.* v, p. 592.

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from the North Sea area? Kossinna favours the first alternative. It may be that the same current reached the Palatinate, since a collared flask was encountered in the Zoned-beaker village of Eiersheimer Mühle<sup>1</sup> and menhirs exist in the same province. On the other hand, a ruined port-hole cist recently identified at Niederschworstadt in Baden contained a flint point, a jet bead, a carved bone amulet, and a copper awl suggesting connexion with the Marne culture of France.<sup>2</sup> Indeed T. D. Kendrick is inclined to derive the whole series of Central German cists with their port-hole slabs from this quarter.<sup>3</sup>

<sup>1</sup> *Infra*, p. 200.

<sup>2</sup> *Badische Fundberichte*, 1927, p. 226.

<sup>3</sup> *Axe Age*, p. 50.



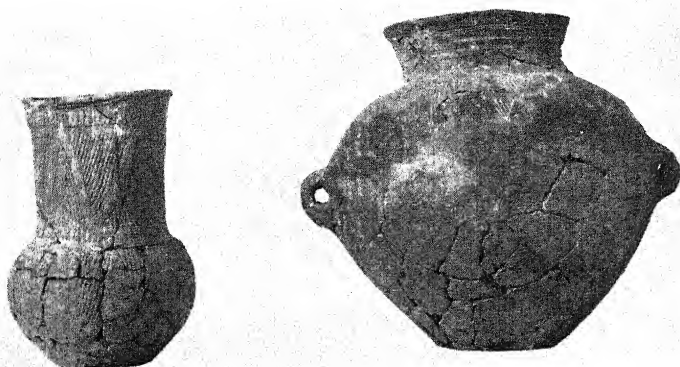


FIG. 86. Beaker and amphora, Peissen, primary interment  
M. Halle.  $\frac{1}{5}$

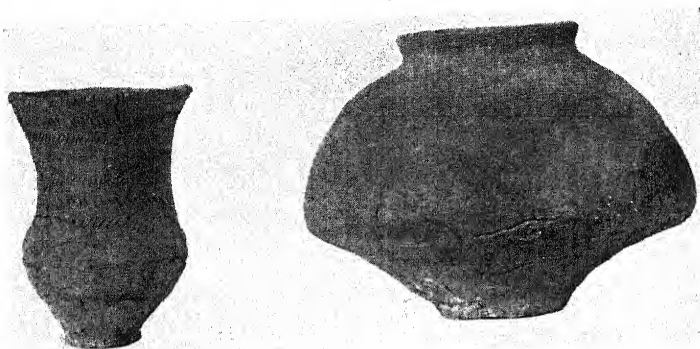


FIG. 87. Vases from secondary interment, Peissen.  $\frac{1}{4}$

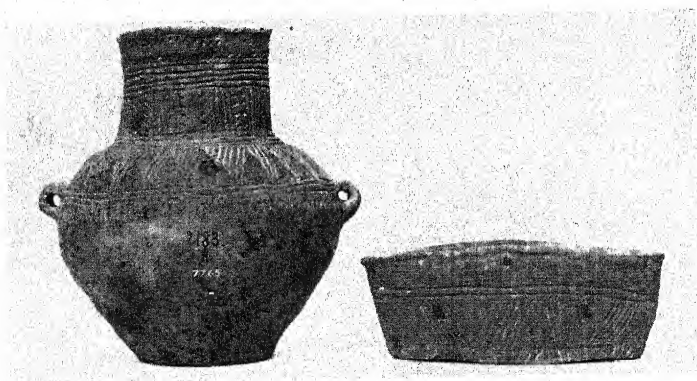


FIG. 88. Vases from Oberfarnstadt. M. Halle.  $\frac{1}{4}$

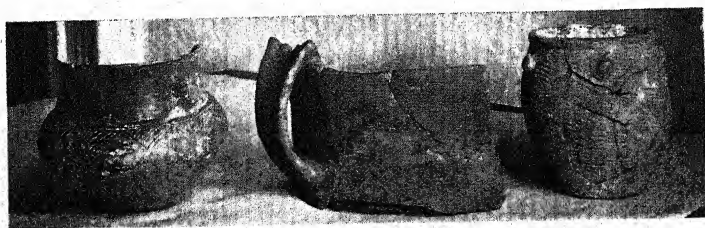


FIG. 89. Vases from Stary Zámek II. M. Brno



## VIII

### CORDED WARE

FROM the Urals to the Vosges and from the Baltic to the Illyrian Alps the remains of a peculiar people distinguished by their pottery, weapons, and burial rites are scattered about unevenly. Hardly any settlements attributable exclusively to this folk are known; the bulk of the material comes from tombs, either isolated or grouped in small cemeteries. In view of this fact and considering their vast range, it may be concluded that the folk in question were essentially nomadic.

The distinctive pottery is comparatively coarse, rarely slipped, and generally pink in colour. The leading forms are a beaker with long, almost cylindrical neck, and an amphora with two or four handles on the belly (Fig. 86). Occasionally the beakers have handles joining neck and shoulder,<sup>1</sup> but these are usually very small and sit right at the base of the neck. Rarer forms are troughs (Fig. 88), oblong or oval bowls with four feet (known also in wood),<sup>2</sup> and cylindrical pyxides with lids.<sup>3</sup>

The characteristic method of ornamentation is by the impression of a cord. In the simplest style the cord was merely twisted round the neck of the vase while still wet, leaving horizontal linear rings. By a more elaborate process, in which the aid of a cord wrapped round a wooden core must have been invoked, triangles were produced on the neck and body of the vase (Figs. 86 and 88). The amphorae might also be ornamented with plastic imitations of a rope.

In late corded ware form and ornament degenerate. The beakers and amphorae assume a squat shape; the cord-ornament is omitted altogether or is replaced by incised patterns, generally herring-bone motives (Fig. 87), but sometimes a mere series of strokes or even pits. The relation of the two styles is proved by the order of the interments in a barrow at Peissen<sup>4</sup> near Halle (Figs. 86-7). The results there obtained agree with Sophus Müller's observations on the separate-graves of Jutland.

In some areas special local styles with new forms arose which will be described separately below.

<sup>1</sup> e.g. *Götze-Festschrift*, p. 26 and pl. II; Stocký, *BAP.*, pl. XXII, 5.      <sup>3</sup> *VAT.*, pl. II, 16; also in SW. Germany.

<sup>2</sup> Stedten (Thuringia), *JST.* i, pl.      <sup>4</sup> *JST.* xi, p. 13.

XXIII, 248.

*Battle-axes* The one weapon universally associated with corded ware is the perforated stone battle-axe. In Saxo-Thuringia and in South-west Germany the faceted type <sup>1</sup> was preferred (Fig. 90). Another Thuringian axe has a rectangular cross-section and rounded butt-end, and is usually decorated with engraved lines and circles.<sup>2</sup> Rougher axes with cylindrical butts (like Fig. 95, 1) are more common in Bohemia and Switzerland. Another series was preferred in the North, the finest specimens coming from the earliest separate-graves in Jutland; later but inferior forms of this series spread to Holland and Finland. East of the Oder a third family with a semi-circular cross-section and overhanging butt-end is more common <sup>3</sup> (Fig. 91); the finest

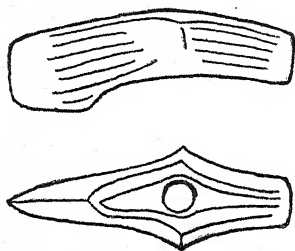


FIG. 90. Faceted battle-axe, Thuringia.  $\frac{1}{4}$

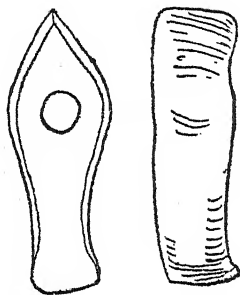


FIG. 91. Battle-axe of Eastern type Nowy Daromin, after *Nied. Sb.*  $\frac{1}{4}$

examples come from the later graves with Marschwitz pottery in Silesia. Otherwise battle-axes are not altogether common in the eastern graves, but the rough type with cylindrical butt is met in barrows as far east as Złota <sup>4</sup> and Jackowice <sup>5</sup> near Kiev, and even on the Kuban. Possibly the celebrated copper axe from Lužice near Göding in Moravia (Fig. 92) and similar axes, less richly decorated, from Thuringia and Switzerland belong to this culture.

*Celts* Celts are less typical. Both hard rock and flint were used. A stone celt from a cist at Stedten in Thuringia was found hafted transversely in a split knee-stick, the shaft being ornamented with carved herring-bone patterns.<sup>6</sup> The flint celts generally have an almond-shaped cross-section like those of

<sup>1</sup> For the distribution see Åberg, *Nordic*, pp. 98 f.

<sup>2</sup> *Mannus, Bibl.* 22, pp. 1-10.

<sup>3</sup> e.g. *Nied. Sb.*, p. 247, fig. 4b.

<sup>4</sup> *WA.* ix, p. 224, fig. 27.

<sup>5</sup> Tallgren, *Pontide præscyth.*, p. 114; *Swiat.* vi, figs. 9 and 20.

<sup>6</sup> *JST.* i, pl. xxiii, 250.

the 'Danordic' culture in Silesia (Fig. 76). One barrow at Ober-Farnstedt in Thuringia yielded a spheroid mace-head, but the tomb contained no pottery and may not belong to this group. However, the same type of mace-head is common in the separate-graves of Jutland, and there is a specimen from grave IX at Bylany in Bohemia. Rough flint lance-heads and triangular arrow-heads are found, principally in late tombs and

*Mace-heads*

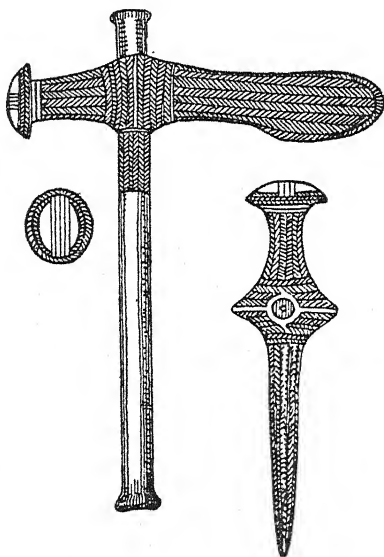


FIG. 92. Copper battle-axe, Lužice, Moravia, after Hoernes.  $\frac{1}{3}$

in the peripheral regions outside Thuringia. The transverse arrow-head has not been reported.

The most characteristic ornaments are necklaces made from the teeth of beasts, particularly wolves. Perforated disks of mother of pearl shell (*Margarita sinuosa*) were worn as ornaments in Thuringia<sup>1</sup> and Bohemia.<sup>2</sup> They were in all cases adorned with punctured lines forming a cross. The same pattern is seen on an amber disk from a tomb at Złota<sup>3</sup> in Little Poland. Small amber beads are also met in tombs with corded ware both in Saxo-Thuringia<sup>4</sup> and Bohemia.<sup>5</sup> A stone ring-

*Ornaments*

*Amber*

<sup>1</sup> Barrow near Helmsdorf, &c.; Möller, *Weimar-Führer*, p. 106.

<sup>2</sup> Zvoleňoves with degenerate beakers, Stocký, *PZČ.*, p. 87.

<sup>3</sup> *WA.* ix, p. 240, fig. 28.

<sup>4</sup> Lützen (Merseburg), Ziegelroda (Querfurt), Brögger, p. 265.

<sup>5</sup> Bylany and Zelenice; the pottery seems already degenerate.

pendant was found in a tomb at Uthleben (Sangerhausen).<sup>1</sup>

*Metal* Finally, rings or ear-rings of copper wire are not uncommon; several instances are recorded in Saxo-Thuringia,<sup>2</sup> Bohemia,<sup>3</sup> Switzerland,<sup>4</sup> and Poland. In Saxo-Thuringia the tombs containing these metal objects are not always late if judged by their ceramic furniture.<sup>5</sup> A pin of real bronze, 12 cm. long, was, however, discovered with corded ware in one compartment of a cist at Kirchscheidungen in Thuringia.<sup>6</sup>

*Red ochre* Gifts of red ochre to enable the departed to paint his person have been recorded in Thuringia (Tröbsdorf) and Switzerland. In South Russian graves the skeleton was laid in a regular layer of ochre<sup>7</sup> so that the bones are found reddened to-day. A like phenomenon was noticed in one barrow with late corded ware at Charlottenhöhe in Uckermark.<sup>8</sup>

*Dwellings* Prior to 1926 no settlements of our Battle-axe folk had been identified in their home land. Then Herren Amende and Frauendorf excavated an oval depression 1.30 m. deep, 15 m. long, and 5.8 m. wide, surrounded at least on the north-west side by post-holes, and containing almost pure corded ware.<sup>9</sup> Outside Thuringia a barrow at Haldorf near Melsingen (Hessen) covered a cabin of logs, laid horizontally, which may illustrate one type of habitation used by the barrow-builders. It measured 1.70 × 1.65 m<sup>2</sup>. and was laid out on the megaron plan with an open porch on the short side.<sup>10</sup>

*Tombs* The burial rite was normally interment in the contracted position under a barrow, the corpse generally lying on the right side. Flat graves, however, are also met in all regions. The tomb itself might be a large stone cist, a simple trench-grave, or,

*Cists* in Poland, a chamber-tomb. The large cists are concentrated in Saxo-Thuringia, though two cists without ceramic furniture from northern Wurtemberg<sup>11</sup> may belong to the Corded-ware culture. The Thuringian cists, lying principally north of the Unstrut,<sup>12</sup> are of no very imposing dimensions. One at Farnstadt measured 3.9 × 1.2 m<sup>2</sup>., another at Stedten 5 m. × 1.5 m. The walls and roof were built of thin slabs of sandstone. In two cases near Querfurt a transverse slab, once pierced with

<sup>1</sup> Brøgger, p. 266.

<sup>2</sup> Mittelhausen and Auleben, M. Halle, both with late pottery.

<sup>3</sup> Bylany (Stocký BAP., pl. xxvi, 5-6).

<sup>4</sup> Schöfflisdorf in M. Zurich.

<sup>5</sup> e.g. at Poserna, P.Z. i, p. 188.

<sup>6</sup> Mit. Prov. Mus. Halle, 1900, p. 93.

<sup>7</sup> Cf. p. 160 below.

<sup>8</sup> Schumann, p. 10; Sprockhoff, pp.

73-4. 'Epipalaeolithic' parallels are here cited from Schmöckwitz near Berlin.

<sup>9</sup> JST. xiv, pp. 30 f.

<sup>10</sup> Real. v, p. 170 and pl. 38a; Germania, vi, p. 110. Cf. Mannus, Ergbd. vi, pp. 202 ff.

<sup>11</sup> Reinerth, Chron., p. 13.

<sup>12</sup> Götze, Gefässformen, p. 27.

a 'port-hole', divided the tomb into two chambers.<sup>1</sup> Port-hole entry slabs are recorded at Ziegelroda and Allstedt.<sup>2</sup> The four uprights of a cist at Stedten were composed of different coloured stones—red sandstone, white limestone, porphyry, and conglomerate.<sup>3</sup> The material must have been brought from some distance, showing the care bestowed upon the disposal of the dead, while the variation of the colours may have had an astronomical significance. The walls of the cist at Göhlitzsch near Merseburg were painted with very conventionalized patterns, among which a quiver and an axe are recognizable.<sup>4</sup> South of the Unstrut two barrows<sup>5</sup> covered complexes of small chambers built of dry masonry. In each case some chambers contained corded ware and others Early Bronze Age interments.

Trench-graves were far commoner. Particularly notable is the shaft-grave with remains of a wooden lining at Poserna in Thuringia.<sup>6</sup> Such trench-graves are met throughout the area. In Jutland they represent the oldest type of separate-grave; later the body was laid on the ground level and the mound heaped over it. *Shaft-graves*

Chamber-tombs with a stepped pit entry and a niche in the side as the actual burying place (Fig. 93) are met only in the löss regions of Little Poland round Sandomierz (Nowy Daromin),<sup>7</sup> Pinczów,<sup>8</sup> and Kielce (Złota).<sup>9</sup> The nearest parallels to the tombs are afforded by the 'catacomb graves' of the Don-Donetz basin<sup>10</sup> and then by the Early Cycladic tombs (pit-caves) in Euboea. *Pit-caves*

All the types of tomb described normally contain only a single corpse, but in some of the large Thuringian cists two or even six persons had been laid to rest. The body was nearly always buried in the contracted posture, lying or squatting against the wall, but three exceptional cases of extended burial have been reported from Thuringia<sup>11</sup> and others come from Wurtemberg.<sup>12</sup> Layers of ashes derived from funerary fires are very frequently mentioned in the reports. *Burials*

<sup>1</sup> *JST.* i, p. 166; the second tomb is said to have contained a 'copper dagger' 17.5 cm. long, and remains of a shield. Both objects are lost.

<sup>2</sup> Kruse, i, 2, pl. 1; *VAPS.* i-ii, p. 73, pls. 1-11. <sup>3</sup> *JST.* i, p. 218.

<sup>4</sup> *VAPS.* i-ii, p. 50 and fig. 36.

<sup>5</sup> Dorndorf (*JST.* i, p. 92) and Kirschenscheidigung (*MPMH.* 1900, p. 93).

<sup>6</sup> *PZ.* i, p. 188.

<sup>7</sup> *Nied. Sb.*, pp. 253 and 266, and fig. 10.

<sup>8</sup> *WA.* ix (1925), p. 341 (Książnice Wielkie).

<sup>9</sup> *Ibid.*, pp. 243 ff.

<sup>10</sup> Tallgren, *Pontide*, p. 28 and fig. 44.

<sup>11</sup> Steinkreutz, Nerkewitz, and Ilbersdorf: *VAPS.* i-ii, p. 74.

<sup>12</sup> Reinerth, *Chron.*, p. 12.

*Cremation* In addition to inhumation, cases of cremation have been observed in Wurtemberg, Thuringia,<sup>1</sup> Poland,<sup>2</sup> and Alsace, and this rite was alone followed in the Swiss barrows of Schöfflisdorf and Zigiholz. Schliz<sup>3</sup> explains the rite in Wurtemberg as a result of the general custom of kindling a funerary fire in the grave-pit. The corpse would have come to be cast into the pit before the flames were extinguished. Sometimes, in fact, the trench was obviously designed for a complete skeleton. While the

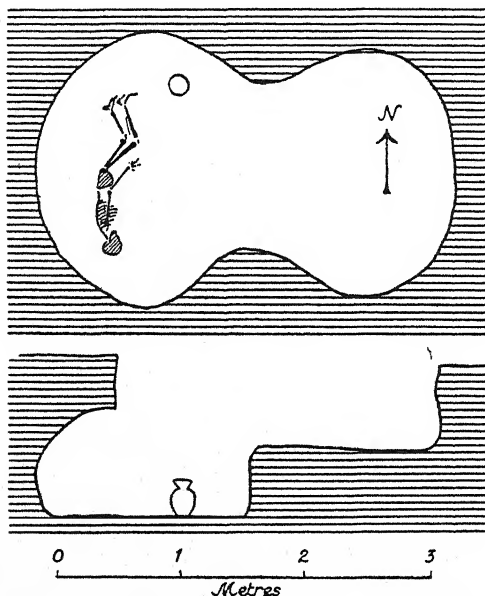


FIG. 93. Plan of a pit-cave, Nowy Daromin, after *Nied. Sb.*

celts and flint points usually show traces of exposure to the flames, the battle-axes have never suffered in this way.

*Trepanation* Trepanned skulls accompanied by corded ware have been noted in Saxo-Thuringia and Bohemia.<sup>4</sup>

*Cranio-logy* The majority of the skeletal remains studied by Schliz<sup>5</sup> belonged to tall, strongly built individuals, markedly dolichocephalic and orthognathous. Brachycephalic skulls have, however, been recorded in Central Germany, Alsace,<sup>6</sup> and in the

<sup>1</sup> Uthleben (Sangerhausen) with early pottery; Lessau (Kruse, II, 2 and 3, p. 34).

<sup>2</sup> *Przeg A.* II, p. 296; with late pottery and battle-axe.

<sup>3</sup> *ZfE.* 1906, pp. 321-3.

<sup>4</sup> Stocký, *PZC.*, p. 88.

<sup>5</sup> *AfA.* VII (1908), p. 261; IX, p. 209.

<sup>6</sup> Forrer, *l.c.*, p. 33; association with corded ware very doubtful.



'mixed culture' of Złota in Poland. Scheidt assigns most of his Corded-Ware skulls (including those from later Marschwitz graves) to his East German long-headed group.

The only animal remains observed in the barrows are the bones of horses, identified in two cases.<sup>1</sup> The question of domestication is unsettled. Horse

Corded ware occupies such a vast area that local variations are to be expected. In Saxo-Thuringia pottery of all ages as well as faceted axes is found in an immense number of graves south of the Hartz and the Bode.<sup>2</sup> Thence it spread south-westward to the hill country round Frankfort and Heilbronn. Though faceted battle-axes and pottery of standard type do occur in this region, the bulk of the material looks late. Moreover Michelsburg pots and celts with pointed butts are found in some barrows.<sup>3</sup> Farther south remains become sporadic in Baden. Beyond the Rhine only one beaker of late type and a barrow are known from Alsace,<sup>4</sup> but there are important groups of tumuli with very decadent pottery, battle-axes, and cremated remains in Switzerland, notably at Schöfflisdorf in Canton Zurich,<sup>5</sup> and Zigiholz near Olten.<sup>6</sup> Corded ware is, moreover, not uncommon in the pile-villages of the Swiss lakes, especially on the lakes of Constance, Bienne, and Neuchâtel. Local varieties  
Rhine valley

South of the Danube in Bavaria we have a degenerate beaker and faceted battle-axe from a trench-grave near Grafrath on the Amper,<sup>7</sup> and a few sherds, accompanying contracted skeletons, from barrows at Unter-Eberfing.<sup>8</sup> Faceted battle-axes, scattered over the hill country between the Neckar and the Upper Rhine and Danube, serve to link up these scattered outposts in the south with the Main-Neckar group.<sup>9</sup> Bavaria

To the south-east corded ware extends directly into Bohemia.<sup>10</sup> The majority of the pottery has a decadent look, and the faceted battle-axe is, according to Åberg,<sup>11</sup> represented by only sixteen specimens. Farther east pure corded ware is rare in Moravia,<sup>12</sup> though twelve rather poor faceted battle-axes have been recorded. Still farther south there are isolated Bohemia

<sup>1</sup> BRGK. xii, p. 75; Åberg, *Niederland*, p. 49.

<sup>2</sup> Bärthold in *JST*. iv, p. 102.

<sup>3</sup> Reinerth, *Chron.*, p. 11, fig. 1; *RGK-Bl.* 1909, p. 19.

<sup>4</sup> Forrer, *l.c.*, fig. 33; Schaeffer, *Haguenau*, p. 151.

<sup>5</sup> *AsA.* 1919, p. 148; Reinerth, *Schweiz*, p. 130.

<sup>6</sup> Reinerth, *Schweiz*, pp. 144 and 232.

<sup>7</sup> *PBl.* 1895, p. 87; *Auh V.* v, pl. 49.

<sup>8</sup> Naue, *OB.*, p. 43.

<sup>9</sup> Reinerth, *Chron.*, p. 67, and map xxxiii.

<sup>10</sup> Stocký, *BAP.* xx-xxvii.

<sup>11</sup> *Nordic*, p. 99.

<sup>12</sup> There are beakers from a cremation grave near Olomouc and from Nemčice on the Hana. *Pravěk* 1926, fig. 33. Cf. Schráníl, *Böhmen*, p. 73.

beakers from Buj in County Szabolcs in North Hungary,<sup>1</sup> and a squat, very typical specimen from the pile-dwelling at Notranje Gorice on Laibach Moor.

*Poland* Pure corded ware has been found in many graves in Oberlausitz<sup>2</sup> but has not been identified in Silesia, although certain globular vessels, associated with the Danordic pottery, approximate to the corded amphorae in shape,<sup>3</sup> and the Danordic vases themselves are not infrequently decorated with cord impressions. On the other hand, in Poland, especially on the löss round Pinczów, Miechów, and Kielce,<sup>4</sup> quite characteristic amphorae and beakers occur in graves—often in chamber-tombs with a stepped pit entry. But even in these areas forms reminiscent of the Lower Oder culture and hybrid Danordic types are common. In the hut-foundations which should correspond to these tombs and even in the pits giving access to the chambers, typical Danordic pottery is found as noted on p. 124.

*South Russia* Still farther east vases, reminiscent of corded ware, occur in many South Russian kurgans, especially at Jackowice near Kiev and in the Don basin. From the former area comes something very like a Thuringian beaker, but the majority of vases both at Jackowice and along the Don are ovoid beakers with very low necks, decorated with hanging triangles executed by cord impressions on the shoulder.<sup>5</sup> Even amphorae of the Thuringian type have been found near Kiev.<sup>6</sup> Battle-axes occur in the same regions, but do not constitute a typical element in the grave-goods. An additional link between these graves and those lying farther west is furnished by necklaces of bored tusks.

*Scandinavia-North Sea coasts* In the north there is another series of graves, closely allied to the Thuringian. The nearest parallels are the Separate-Graves of Jutland. The beakers from these are precisely parallel to the Thuringian and undergo the same degeneration, herring-bone patterns replacing cord impressions in the ground-graves. Amphorae are however absent, save for two stray specimens,<sup>7</sup> and the forms of the battle-axes are different. Between Bremen and Hamburg,<sup>8</sup> however, a group of barrows has been excavated where amphorae of late Thuringian type

<sup>1</sup> *Dolgozatok*, v, p. 418. Probably the red skeletons from barrows on the Upper Tisza plain belong to this culture. Cf. p. 206 below.

<sup>2</sup> *Mannus*, xix, pp. 17 ff.

<sup>3</sup> *SV*, vii, p. 60; *Alttschles*, i, p. 212.

<sup>4</sup> Kozłowski, *Młodsza*, pl. xv; *Wiad A*

viii, p. 98; ix, p. 341; *Nied. Sb.*, p. 244.

<sup>5</sup> Tallgren, *Pontide*, figs. 36, 10; 41, 5; 69, 3-4.

<sup>6</sup> *Ibid.*, p. 120.

<sup>7</sup> S. Müller, *Stenålders K.* figs. 231-2.

<sup>8</sup> *Mannus*, i, pp. 267 ff.

were associated with battle-axes of late Danish type. Apparently from this northern centre beakers and battle-axes of late form spread westward to Holland. In that country, principally in Gelderland<sup>1</sup> and on the Lower Rhine round Cologne,<sup>2</sup> corded beakers with a stand ring are found in trench-graves under barrows. With them are associated stone battle-axes of very degenerate form. In some cases the same barrow contains a zoned beaker at a higher level.

Eastward on the Lower Oder there are numerous groups of flat graves and barrows,<sup>3</sup> the furniture of which includes poor beakers with cord or herring-bone ornament,<sup>4</sup> one amphora, thick-butted flint celts, and degenerate-looking battle-axes. The distinctive features of the Lower Oder pottery are, however, the flower-pot vases (Fig. 94, 6-7), and the ledge-handled beakers (Fig. 94, 2), together with the free use of a chevron decoration (Fig. 94, 1). Despite its similarities to the culture of Jutland, the Lower Oder group should probably be connected rather with the Thuringian centre since the faceted battle-axe extends from the Saale into its territory.<sup>5</sup> Still farther to the north-east cord-ornamented beakers and battle-axes are found in barrows in East Prussia<sup>6</sup> and Finland.

The types of the Lower Oder ware are widespread throughout Great Poland (Fig. 94), and extend into the dunes of Little Poland.<sup>7</sup>

In Silesia<sup>8</sup> flower-pot vases and ledge-handled beakers, such as we meet on the Lower Oder, are found in Marschwitz graves, belonging to the very end of Period III.<sup>8</sup> Similarly, many of the vases and battle-axes found in the tombs of the Little Polish löss district belong to the Lower Oder family (Fig. 93).<sup>9</sup> The same types with Silesian battle-axes recur in barrows in Eastern Moravia,<sup>10</sup> and then in the second settlement at Starý Zámek, where they are associated with *ansa lunata* mugs and collared flasks.

In the löss region of Little Poland a curious and apparently hybrid culture<sup>11</sup> arose, best illustrated by the settlement and

The  
Lower  
Oder

Silesia

Złota  
culture

<sup>1</sup> Åberg, *Niederlanden*, pp. 41 ff.

<sup>2</sup> *Mannus*, *Ergänzungsband*, iv, p. 121, pl. ix, A2.

<sup>3</sup> Schumann, *Uckermark*, pls. xii and xxix; *Mannus*, vii, pp. 44 ff.; *Götze-Festschrift*, pp. 44 ff.; Sprockhoff, *Mark Brand.*, pp. 55 ff., with plates.

<sup>4</sup> In contradistinction to the Thuringian, these beakers often have a distinct foot; Kossinna, *Mannus*, i, p. 232.

<sup>5</sup> So Sprockhoff in *Götze-Fest.*, p. 46; *Mark Brand.*, p. 61.

<sup>6</sup> *Mannus*, x, p. 13.

<sup>7</sup> Kozłowski, *Młodsza*, p. 34, Map. III.

<sup>8</sup> *Infra*, p. 223.

<sup>9</sup> e.g. Grave III at Nowy Daromin *Nied. Sb.*, pp. 247, fig. 4, g and d.; cf. Kozłowski, *op. cit.*, p. 64 and pl. xv.

<sup>10</sup> Červinka, *MS.*, pp. 150-8.

<sup>11</sup> Kozłowski, *op. cit.*

cemetery of Złota near Kielce. The pottery brought to light by earlier unscientific excavations exhibits a bizarre mixture of forms and ornaments. We have vases in the form of Danordic or globular amphorae decorated in the style of corded amphorae, and tall funnel-necked beakers adorned with straight or wavy cord impressions. Conversely, Thuringian amphorae are ornamented with U or V stamp-impression like globular amphorae. There are also numerous shallow cups with *ansa lunata*. More recent excavations have brought to light purer

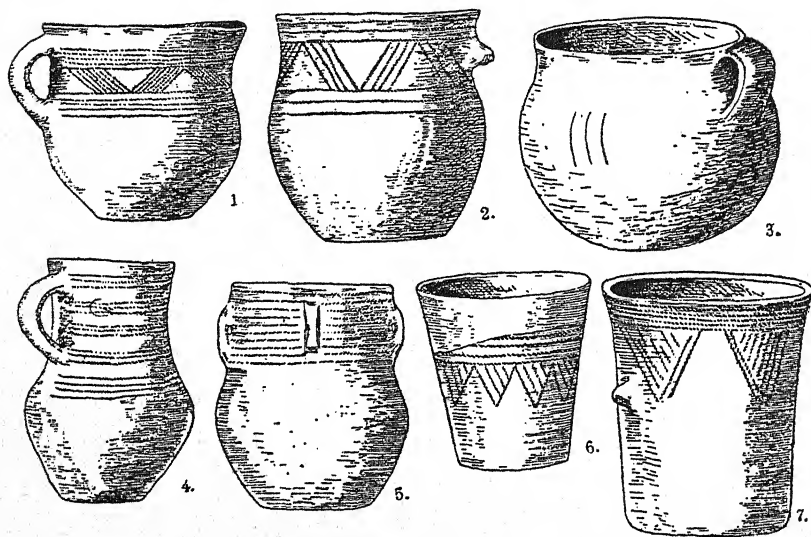


FIG. 94. Lower Oder corded ware, Great Poland, after Kosłowski.  $\frac{1}{3}$

Nordic types in hut-foundations and more distinctively Thuringian forms in the chamber-tombs.<sup>1</sup>

Other elements in the grave-goods were battle-axes of East European affinities (allied to the Marschwitz type), flint celts and sickles, bone pendants and amber beads with V boring, and disks ornamented with a punctured cross. Nordic and brachycephalic types were mixed with representatives of Czekanowski's 'pre-Slav type'.<sup>2</sup>

In the light of the latest excavations at Złota, and of Żurowski's explorations at Książnice Wielkie, it may be inferred that there was first a stage when Danordic ware was used for profane purposes, corded ware being reserved for the dead. Later the

<sup>1</sup> *WA.* ix, p. 243.

<sup>2</sup> *Ibid.*, pp. 48 ff.

two styles were blended. Since the Danordic pottery is found in the pits (? pit-dwellings) from which the sepulchral chambers open, it might be inferred that corded ware represents the oldest element in the district.

The civilization of the last settlement at Starý Zámek near Jeřišovice in Moravia (called by Menghin the Jaispitz culture) exhibits analogous hybrid traits.<sup>1</sup> Side by side with a series of late Corded Ware types—degenerate amphorae and beakers (Fig. 89 a), flower-pot beakers of Lower Oder type, and battle-axes with cylindrical butt-ends, Palliardi found 'Danordic' forms—collared flasks<sup>2</sup> and cups with *ansa lunata* (Fig. 89 b)—and elements derived from the south—harrowed pottery (Fig. 89 c), and vases with spikes on the inside as in North Hungary. Similar material has been collected at the Köglburg near Krems in Lower Austria<sup>3</sup> and at Hronský Damašd on the Gran (Garom, Hron) in Slovakia.<sup>4</sup> In these sites, which may well outlast Period III, we have interesting evidence of the interaction of two cultural currents from the north and south respectively.

*The  
Jeřišovice  
culture*

The relative date of Corded Ware has long been the subject of hot dispute. While most authorities regard it as the latest of 'neolithic' wares, Schliz<sup>5</sup> and Götze<sup>6</sup> have referred the beginnings of the fabric to the earliest phase of the New Stone Age in the Neckar country and Thuringia respectively. In point of fact both schools are right. Corded pottery was not in use everywhere at the same moment. On the other hand, in some areas, notably Thuringia and Denmark, the culture had a long life, as the vast number of the barrows, the variety of ceramic styles, the changes in the axe types, and the divergence in burial rites clearly indicate. All that is possible in view of its longevity is to lay down limits within which the ware was current in several areas.

*Chrono-  
logy*

In Denmark Sophus Müller has identified vases, belonging allegedly to the pre-Dolmen period,<sup>7</sup> which have been ornamented by a cord impression round the neck and which anticipate the form of the corded beaker. A more characteristic and better dated vase comes from a separate-grave of Dolmen Age on Bornholm. The most typical beakers lie, however, in graves of Montelius' period 3. Not only the degenerate

*Danish  
evidence*

<sup>1</sup> Palliardi, *WPZ.* i, l. c.

<sup>2</sup> i.e. pottery the surface of which has been roughened by scraping.

<sup>3</sup> *WPZ.* ix, p. 29; *MAGW.* lii, p. 139.

<sup>4</sup> M. Bratislava.

<sup>5</sup> *ZfE.* l. c. xxxviii (1906), p. 342.

<sup>6</sup> *VAT.*, p. xxi.

<sup>7</sup> They almost certainly belong to Montelius' period 2; cf. p. 112, above.

beakers with herring-bone ornament, but even the still later flower-pot vases fall within the Passage-grave epoch. We may conclude therefore that Corded Ware goes back to Montelius' period 2 and reaches maturity in the early part of 3.

*In Danubian I settlements* For Central Germany and Bohemia the evidence is less conclusive. The earliest indication is a sherd from a pit-dwelling belonging to Danubian Ib people at Řež near Klecan<sup>1</sup> in Bohemia. Similarly Näbe found sherds of corded ware in a Danubian I settlement near Leipzig,<sup>2</sup> while elsewhere the faceted battle-axe is said to occur in similar settlements.<sup>3</sup> On the other hand, Amende points out that in the Altenburg East Division the distribution of Corded Ware barrows and Danubian I settlements coincides, and that in one case a grave with corded ware had disturbed a hut-foundation of the last named group. He accordingly infers that the occupation of the region by corded ware makers was subsequent to its desertion by Danubian peasants.<sup>4</sup>

*Barrows of Baalberg, &c.* Multiple interments in the barrows of Baalberg, the Pohlsburg near Latdorf, and the Derflingerhügel near Kalbsrieth give somewhat ambiguous clues as to the relations between corded ware and the globular amphorae and Bernburg pottery respectively. In each case Niklassen concludes that the corded ware belonged to the latest interment in these barrows.<sup>5</sup> But the corded vases in question were of late type, and the same author in his latest work assigns the earliest corded ware to his Walternienburg II or Bernburg I phase.<sup>6</sup>

*Helmsdorf* In the great barrow at Helmsdorf a small cist with late corded ware was found on the periphery of the huge tumulus, and 0.50 m. lower down than the main grave of Early Bronze Age date. Grössler thinks, however, that the small cist contained the body of a servitor slain when the chief, reposing in the rich central tomb, was laid to rest. In that case corded ware in Thuringia would still have been in use in the Early Bronze Age. That conclusion is supported by observations in the compound cist at Dorndorf, where two compartments contained Early Bronze Age interments and the remaining three skeletons accompanied by rather decadent beakers and amphorae.<sup>7</sup> So in Bohemia<sup>8</sup> corded ware has been found with bell beakers.

<sup>1</sup> Stocký, *PZČ.*, p. 89.

<sup>2</sup> Günthersdorf; Näbe, *op. cit.*, p. 14, pl. II, 1-2.

<sup>3</sup> *PZ.* v, p. 280.

<sup>4</sup> Götze-Festschrift, p. 32.

<sup>5</sup> Mannus, xvi (1924), pp. 49 f.

<sup>6</sup> *JST.* xiii, p. 16.

<sup>7</sup> *JST.* i, p. 92 and pl. XII.

<sup>8</sup> Stocký, *PZČ.*, p. 90.



Reinecke goes further and contends that the faceted battle-axe is an imitation of Early Bronze Age metal weapons. But though it is very possible that copper axes like those from Lužice and Vinetz were really the models for the stone weapons, these copper types may themselves well go back to Period III.

We conclude that the roots of corded ware in the Thuringian highlands may well be referred to Period II, and that the ware was current throughout Period III and even in the early part of Period IV. No reliance can be placed on the typology of the tombs in Central Germany;<sup>1</sup> for the several types differ as much locally as chronologically, and the Danish evidence cannot be ignored.

*Corded  
ware  
lasts  
from II-  
IV*

The conclusions reached for Denmark and Thuringia do not necessarily hold good for other regions. Farther west corded ware probably began rather later than on the Saale, but independent criteria of data are rare. In a barrow near Fulda<sup>2</sup> a grave with corded ware lay at a lower level than a brachycephalic skeleton accompanied by a plain bell beaker. Similarly, in one barrow in Gelderland a corded beaker was demonstrably older than a zoned beaker.<sup>3</sup> On the other hand, the celts with pointed butts found in some barrows in Wurtemberg belong to the epoch of the zoned beakers. Finally, the Middle Bronze pottery in Starkenburg and elsewhere in South-West Germany is so strongly reminiscent of corded ware that the latter culture must be continuous with that of the Tumuli.<sup>4</sup> Hence corded ware reached the Rhine valley before the end of Period III and very likely survived in the highlands throughout Period IV.

*Date on  
the Rhine*

The upper limit for Corded Ware east of the Elbe is much harder to determine. The position of the Marschwitz culture in Silesia and that of Starý Zámek II in Moravia are indeed determined stratigraphically; both belong to the very end of Period III. A correspondingly low date for the specialized culture of the Lower Oder may be inferred from its obvious affinities to the Marschwitz culture on the one hand and that of the Danish upper-graves on the other. It is not thereby demonstrated that the graves with good beakers and amphorae

*East of  
the Elbe*

<sup>1</sup> *JST.* iii, p. 136. The series would be:  
2a 'Huns' Beds'.

2b Big chambers of unhewn blocks.

3a Big chambers of stone slabs.

3b Small stone cists.

4 Barrows without cists.

Corded ware only occurs in 3a and below. Cf. Reinert, *Chron.*, p. 12.

<sup>2</sup> *Fuldäer Geschichtsverein, Schriften*, vi (cf. Skizze I).

<sup>3</sup> *PZ.* iv, pp. 370 f.

<sup>4</sup> *Infra*, p. 314.

on the Little Polish löss lands do not go back to a distinctly earlier period.

*Summary* The barrows with corded ware reveal to us a wandering race of hunters and pastoralists. They appear as a pre-eminently martial folk; yet, whether by plunder or trade,<sup>1</sup> they were able to secure products of distant lands. Their favourite haunts, moreover, lay in proximity to natural sources of wealth—the amber of Jutland, the salt of the Saale valley, the tin of the Bohemian Erzgebirge. Perhaps they took toll on those engaged in exploiting these resources. On the Neckar, Schliz thinks they played the part of over-lords among the Danubian peasants, and Reinerth assigns them a similar role with regard to the Michelsberg folk. The occurrence of battle-axes and corded beakers in the later lake villages of Switzerland indicates an actual conquest by the Nordic warriors. These conquering battle-axe wielders exerted a profound influence wherever they went. We shall see that vital elements in the Middle Bronze Age cultures of South-West Germany, Hungary, and Poland can be traced back to them.

*Origin* But who were they and whence did they come? To this question three answers have been propounded. Kossinna sees in the makers of corded ware descendants of the autochthonous population of Denmark. The rudiments of their distinctive pottery go back to pre-Dolmen times. The separate-graves would represent the survival of native funerary customs uncontaminated by the western influence that introduced the megalithic idea. The stone battle-axes might be derived from the flint-armed antler axes of Shell-mound times.<sup>2</sup> The diffusion of Corded Ware would then be ultimately due to the expansion of the aboriginal Baltic population either from Jutland or from secondary centres in Thuringia or on the Lower Oder.

This view has been endorsed, to some extent, by Professor Menghin, but is to-day losing ground. Whatever may be said of the Dolmen period, Sophus Müller, Nordmann, Stjerna, Schwantes,<sup>3</sup> and other leading authorities are unanimous in regarding the Battle-Axe graves of Montelius' period 3 in Jutland as intrusive.

*Thuringia* As the original home of the invaders many look to Thuringia. It was here that Corded Ware attained its richest and fullest

<sup>1</sup> Sprockhoff suggests that it was this folk who carried bronzes to East Prussia (*infra*, p. 243) bringing back amber in return.

<sup>2</sup> I add this last argument; Kossinna does not seem to have thought of it.

<sup>3</sup> *Völker und Rasse*, i, p. 162.

development, and hence migrations in various directions could conveniently be traced. Now, despite the forest conditions ruling during the Atlantic epoch, there were probably open spaces, fit for occupation, in sandy patches. And quasi-microlithic flints, that may be the work of epipalaeolithic men, are actually turning up all along the Saale valley<sup>1</sup> and elsewhere. Given an epipalaeolithic population in this area, it is not inconceivable that they should have assimilated some elements of neolithic culture from the Danubians, especially the Rössen folk; these did use hammer-axes, and there are real analogies in form and ornament between Rössen and corded pottery.<sup>2</sup>

Such a theory has much to commend it. The main difficulty is the very exiguous quantity of the evidence for any pre-neolithic population in our area. And then peculiar originality must be ascribed to these rather hypothetical survivors if they initiated the use of barrows and all the very positive traits that distinguish our culture.

The remaining theory, proposed by the author, derives the battle-axe folk from South Russia. The Danish separate-graves, the Thuringian barrows, and the Fatyanovo culture of Central Russia would all be due to movements radiating from the Pontic steppes. There we have evidence for an epipalaeolithic population, and there the necessary conditions for their education in neolithic arts as well as the rise of the battle-axe<sup>3</sup> culture are fulfilled. The cultural community between the barrow builders in Jutland, Thuringia, and South Russia is undoubted. Recent discoveries have even demonstrated the spread of elements of culture from South Russia westward in a manner that does not permit of reversal. The 'Aegean' plan of the chamber-tomb, adopted by the corded ware makers of Little Poland, can only have been transmitted across South Russia where the 'catacomb graves' of the Don basin provide the needful link. Moreover Europæus<sup>4</sup> has identified in the East Baltic States a series of battle-axes of pure South Russian type.

*South  
Russia*

There are nevertheless serious objections to such a view.<sup>5</sup> The

<sup>1</sup> Cf. map II.

<sup>2</sup> The reported epipalaeolithic burial with red ochre at Schmöckwitz would provide an additional argument for the local origin of our cultures. Cf. note 8, p. 148 above.

<sup>3</sup> The battle-axe as a weapon seems native in Hither Asia; in Mesopotamia it may be traced to the fourth

millennium B.C.

<sup>4</sup> *FM.* xxxi (1924), p. 54.

<sup>5</sup> The horse is still regarded as an eastern steppe animal, but the bones from Corded Ware barrows in the Rhine basin cannot be used in support of the South Russian hypothesis until the native European forest horse be excluded by further study of the remains.

whole steppe culture of South Russia has a late look. Corded ware is only one of its components, restricted to limited areas. Battle-axes are not typical elements in the furniture of the steppe graves, and in the Donetz basin they occur principally in the 'catacomb graves',<sup>1</sup> whereas the true corded ware is found only in the earlier trench-graves. The corpse was nearly always stained with red ochre, a practice attested in only one German grave though more common in North Hungary. While it is possible to place the ovoid beakers from South Russia at either end of a typological series, the vases from intermediate areas like Poland really look later than the corresponding ones from Thuringia or Jutland.

So the question must be left open.

<sup>1</sup> Tallgren, *op. cit.*, p. 116.

## IX

### THE PILE-DWELLING CULTURES

AT the foot of the Alps in the valleys of Switzerland and along the highland zone between the Rhine and the Elbe had dwelt in epipalaeolithic times a comparatively substantial population. Though the highlands were densely wooded throughout the early neolithic phase, there is no reason why such folk should have deserted the region, for the forests must have harboured plentiful game.

#### I. GENERAL SURVEY

The neolithic civilization of these same regions is that of the 'Pile-Dwellings', a term which covers a plurality of distinct cultures, disparate in character and in age. The most striking feature common to them is the choice of lake-shores or marshes as the sites for villages. The practice in question was conditioned by the nature of the country in Atlantic and early Sub-boreal times. Given a half-civilized population possessed of a neolithic culture and requiring all the available open spaces for their crops and their herds, but incapable, for want of efficient tools, of clearing away the forest, the only suitable sites for settlement were the open peat-bogs and lake-shores. The celebrated lake dwellings are just the devices adopted to meet these conditions.

'Lake Dwellings' fall into three classes. The most celebrated are those supported on piles. Only the piles survive to-day, and the reconstructions figured in the text-books are pure works of imagination. Each house was a distinct entity, connected with the next only by one narrow bridge. The aggregation of habitations on a single platform, usually depicted, gives quite a false impression. In fact, the village consisted of a series of houses strung out along the lake-shore. The houses themselves were rectangular, the average size on the Lake of Bièvre being about  $6.50 \times 4.50$  m<sup>2</sup>. But in some villages at least there are traces of one big house near the centre of the settlement that might measure  $7.50 \times 6.50$  m<sup>2</sup>. or more.<sup>1</sup> These larger structures, like the big house at Aichbühl, have been compared to the Melanesian assembly-houses. To-day

*Varieties  
of lake  
village  
Pile-  
dwellings*

<sup>1</sup> The foregoing account is based on pile-dwelling architecture that has Ischer's article in *AsA.* 1926, pp. 65 ff., been made. Cf. now Reinerth, the first and only objective study of *Schweiz.*, pp. 70 ff.

the view is gaining ground that the pile-villages were not built over the open water but on the muddy margin of the lake. Their submergence would be due to the rise of the water level since Subboreal times.<sup>1</sup> Rudolf Much and Kyrle have, however, very recently adduced pertinent objections to too wide a generalization along these lines.<sup>2</sup>

*Stacked  
platforms* The second class may be designated 'Stacked Platform Dwellings' (Packwerkbauten). According to Heierli,<sup>3</sup> these began in log rafts afloat on the edge of the lake and kept in place by vertical piles at the corners. The raft gradually becoming waterlogged, another layer of logs was laid upon it, and then another, till a stack resting on the lake bottom was formed. In the classical example of this type at Niederwil<sup>4</sup> (Egelsee) the pontoon had been renewed six or eight times. Reinerth, supported by Viollier,<sup>5</sup> considers these structures identical with the Moor-villages. They had been originally, not floating rafts, but wooden platform-pavements laid on the peat; these had sunk and had, therefore, been renewed.

*Moor-  
villages* In the third type the log floors of the houses and the pavings of the streets and courts were admittedly laid directly upon the peat.

*Disparity  
of mate-  
rial col-  
lected* The exploration of the relics submerged under the waters of the lakes in Switzerland and Wurtemberg, begun in 1853, has yielded a peculiarly vivid picture of a neolithic civilization. But we know to-day that that picture was essentially composite, blending elements belonging to different epochs and disparate cultural groups. Stratigraphical excavations on Lake Neuchâtel by Dr. Vouga have shown that a given site might be occupied for a long period during which culture changed materially. There is no guarantee that any other sites, explored merely by means of the dredging machine, are any more unitary. And the same excavations have shown that the old typological criteria for estimating the age of individual objects are worthless. Subsequent researches by Dr. Reinerth of Tübingen suggest that the lake-area of Switzerland and Wurtemberg was divided into two distinct cultural provinces when the full neolithic period opened. But at present only a fraction of the material gathered from the lake-dwellings can be attributed with any confidence to one or other of these

<sup>1</sup> Vouga, *L'Anthr.* xxx, p. 52; Viollier, *MAGZ.* xxix, p. 152; Reinerth, *Schweiz.*, pp. 68 f.; *Antiquity*, ii, p. 404.

<sup>2</sup> *MAGW.* lvii (1927), pp. (38) ff.

<sup>3</sup> *Urgesch.*, p. 99.

<sup>4</sup> *MAGZ.* xxii, p. 44; *Bj.* 127, p. 119.

<sup>5</sup> *MAGZ.* xxix, p. 153.



chronological phases or cultural provinces. The great mass of the finds can only be treated as a unit, however disparate it may be in reality. Without trying to repeat familiar descriptions of lake-dwelling civilization, it may be well to recapitulate the main traits, before proceeding to a detailed analysis of the several cultural groups and their evolution in time.

The inhabitants of the lake villages described on p. 162 were a race of pastoralists and cultivators. The people themselves are known only from the fragmentary remains of individuals found among the ruins of the settlements; for no cemetery has been found attached to any lake village, and we simply do not know how the dead were disposed of.<sup>1</sup> The existing remains and fragments reveal a characteristic Alpine type, with short head, broad face, and wide nose. Besides this type we meet disharmonic crania, still brachycephalic, due, according to Schlaginhaufen,<sup>2</sup> to a crossing of the Alpine stock with a dolichocephalic race. Since in the Bronze Age the pure short heads have vanished and dolichocephals are common, there is much probability in the doctrine, advanced originally on typological grounds, that the oldest lake-dwellers were the pure brachycephals. The intrusive dolichocephalic element is generally identified with the Nordic intruders whose advent is attested by the archaeological evidence from the pile-villages (battle-axes, sherds of corded ware), and on the land (barrows with corded ware).

The animals<sup>3</sup> included in the flocks of the lake-dwellers were: *Physical type*

Short-horned cattle<sup>4</sup> (*Bos brachyceros*).

The turbary sheep (*Ovis aries pal.*).

The turbary pig (*Sus palustris*).

The turbary goat (*Capra hircus palustris*).

The turbary dog (*Canis palustris*).

Remains of horses are exceedingly rare and probably come from wild animals.

The principal grains<sup>5</sup> cultivated were:

*Grains*

Wheats: *Triticum monococcum*.

*Triticum dicoccum*.

*Triticum compactum* (in three subspecies).

<sup>1</sup> Reinerth, *Schweiz.*, p. 125, assigns to the Lake-dwellers the well-known Chamblandes cemeteries which have in fact no relation to lake villages.

<sup>2</sup> *MAGZ.* xxix, p. 240; cf. Schenk, *La Suisse préh.*, pp. 531 ff.

<sup>3</sup> Hescheler, *MAGZ. l.c.*, p. 247; Riverdin and Pittard, *AsAg.* iv, pp. 259 ff.;

Schenk, *op. cit.*, pp. 266 f.; Reinerth, *Schweiz.*, tabulates the results after p. 227.

<sup>4</sup> A variety of *Bos primigenius* was also domesticated at a few sites.

<sup>5</sup> Neuweiler, *MAGZ. l.c.*, p. 257; Schenk, *op. cit.*, pp. 294 ff.; Reinerth, *Schweiz.*, p. 225.

Barleys: *Hordeum distichon* (rare).

„ *polystichon*.

„ *hexastichon* (in two subspecies).

Spelt, millet, and oats.

*Fruit* In addition lentils, peas, and broad beans, and two sorts of small apple were probably cultivated. Apples seem to have been pressed for the manufacture of a sort of cyder.<sup>1</sup> Traces of the vine are occasionally met.

*Flax* Flax was grown for the manufacture of the textiles. The variety used was distinct from the modern *Linum usitatissimum*, and probably represents a cultivated form of a local native flax.<sup>2</sup>

*Industries* The mud of the lakes has embalmed for us a unique record of the handiwork of early man. Some products not assignable to any specific period may be mentioned here. The textile<sup>3</sup> remains attest considerable technical ability, and the netting and basketry is likewise fine. Wooden vessels, bows,<sup>4</sup> and boomerangs have been preserved, as well as dagger-hilts and arrow-shafts. Generally, but not universally, the celt was hafted with the aid of an antler sleeve, the elasticity of which reduced the shock of the blow and so protected the shaft from splitting. Bone and horn were in general very widely used.

*Harpoons* Horn harpoons, fish-hooks, and fish-spears,<sup>5</sup> bone combs and 'forks', whistles made from the phalanges of swine, and drinking cups of horn and tortoise-shell deserve mention. Much of the bone-work—the harpoons, the phalange whistles, the cubital daggers, the antler axes—is frankly reminiscent of epipalaeolithic or even palaeolithic forms. The resemblances are, however, rather superficial; the harpoons, for instance, are more like Danubian I specimens than Azilian or Maglemosean.

*Reinerth's classification* The celts and the pottery have provided Reinerth with the basis for a division of the Alpine Stone Age, both geographical and chronological. They reveal in the first place two cultural provinces; the one, which Reinerth terms 'Nordic', embraces at first Wurtemberg, and Switzerland east of the Aar. West of that river begins Reinerth's 'Western' province. He further distinguishes four typological stages in the evolution of the stone implements, corresponding to four periods. By the last of these the frontier between the two provinces had

<sup>1</sup> Reinerth, *Schweiz.*, p. 47.

<sup>2</sup> Neuweiler, *l. c.*

<sup>3</sup> See Heierli's chapter in *Urgesch.*, pp. 172 ff.

<sup>4</sup> All of simple form; cf. Reinerth, p. 36 and fig. 1.

<sup>5</sup> *Ibid.*, figs. 2 and 3.

virtually disappeared, and the whole highland area was occupied by a comparatively uniform mixed culture.

In the 'Nordic' province the celts generally have a rectangular cross-section, having been made by sawing out of the original block;<sup>1</sup> they are supposed to develop through four stages, the first of which is only represented in the eastern area.<sup>2</sup> In the same province Danubian shoe-last celts, like the Hinkelstein type of Fig. 22b, are found, especially on the Lake of Constance, but sporadically as far south as the Lake of Geneva.<sup>3</sup> To the same group belong Danubian axe-hammers like Fig. 22d, and hammer-axes like Fig. 56d.<sup>4</sup> The earlier of the eastern area is said to be the same as the Aichbühl ware to be described below. The whole complex will, in fact, find its explanation in Wurtemberg.

'Nordic'  
celts

Shoe-last  
chisels

The Western celts have a round or oval cross-section, being made from pebbles. The 'oldest' (i.e. the most primitive) type (stage 1) is very plump, with a nearly round cross-section and a blunt butt. The latest type (stage 4) has a pointed butt and is nearly flat. Between the two extreme Reinerth inserts two intermediate stages<sup>5</sup> for which neither stratigraphy nor distributions provide any evidence. Stage 1 is virtually confined to the area west of the Aar, apart from a small group on the Lake of Constance, while stage 4 is spread evenly over the whole area. The lateness of the latter type is well attested by its context in Germany where it belongs to the end of our Period III and the beginning of IV, and in France where it is associated with bronze daggers.<sup>6</sup> On the other hand, the primitive form is not necessarily old.<sup>7</sup> To the Western culture would have belonged originally a series of round- or flat-bottomed vases, with no handles save lugs, no division into parts, no ornamentation save plastic ridges, and usually made of coarse paste, unevenly fired and containing large quartz grits.<sup>8</sup>

'Western'  
celts

This Western culture would be entirely distinct from that first defined and would have originated in South France. We may here note that Reinerth's Western celts are in truth

Contrast  
with  
Danube

<sup>1</sup> *Schweiz.*, p. 176.

<sup>2</sup> There is absolutely no stratigraphical evidence for any such evolution; indeed the evidence from Vouga's excavations is incompatible with its validity, *WPZ.* xi, p. 20.

<sup>3</sup> Reinerth, *Schweiz.*, pp. 191 and 258, fig. 77.

<sup>4</sup> *Ibid.*, figs. 74, 76, 78, and p. 262. The axe-hammer has been found *in*

*situ* first in the Middle Neolithic of Auvernier, not in the Lower as stated by Reinerth on p. 184: cf. *WPZ.* xi, p. 22.

<sup>5</sup> Childe, *Dawn*, fig. 121; Reinerth, *Schweiz.*, pp. 170 f., fig. 65.

<sup>6</sup> *Infra*, p. 184.

<sup>7</sup> For instance in Thessaly it is commonest in the Bronze Age.

<sup>8</sup> Reinerth, *op. cit.*, figs. 49-50.

western *qua* pebble celts; they belong to a family strange to the Danube basin but familiar all along the Mediterranean coasts in Crete,<sup>1</sup> South Italy,<sup>2</sup> and Spain, and then all over South France.<sup>3</sup> The type with pointed butt finds its finest exponents in the Breton dolmens.

The foregoing system provides a convenient framework for our further analysis. Fortunately, in each area there are sites that have been scientifically excavated, and a description of these will help to fill in the details and correct errors.

## II. EAST SWITZERLAND: AICHBÜHL I and II

The type site for the eastern province is Aichbühl on the Federsee Moor, where two superimposed villages, separated by the sterile deposit left by a flood, were explored in 1919 by the Urgeschichtliches Institut of Tübingen.<sup>4</sup>

*Aichbühl* The village of Aichbühl I was erected on the sedgy shores  
*I: houses* of the Federsee. The houses were built on log platforms, either resting directly on the peat or raised above the sedgy shore of the lake by piles. Part of the platform constituted an open forecourt in front of the house. The latter was a rectangular structure of the *megaron* type with a gabled roof supported by stout posts. The entry was on the small side, and the roofed area was divided into two parts—an open porch and a square chamber behind. In the porch stood an oven, while there was sometimes a hearth in the inner room. A typical house of this type measured  $(3 + 5) \times 5$  m<sup>2</sup>. Besides these dwelling houses there was a large one-roomed house in the centre of the village.<sup>5</sup>

*Pottery* The pottery from the older village in its best specimens is a fine, polished, black ware corresponding technically to Danubian II fabrics. And most of the forms illustrated by Reinerth recur in that culture at Jordansmühl, Rössen, or Münchshöfen. Such are pedestalled bowls,<sup>6</sup> deep dishes with inturned rims,<sup>7</sup> biconical pots with cylindrical necks and round string-hole knobs,<sup>8</sup> and one-handled cups. Other shapes such as the flasks<sup>9</sup> and keeled bowls<sup>10</sup> are reminiscent of the Bavarian Rössen pottery (that was partly contemporary with Münchs-

<sup>1</sup> Evans, *Palace*, fig. 15a, 1.

<sup>2</sup> Peet, *Stone and Bronze*, fig. 59.

<sup>3</sup> Åberg, *Western*, pp. 51 f.

<sup>4</sup> No regular report has appeared despite the lapse of eight years; the following account is based on indications given by Reinerth in *Chron.*

<sup>5</sup> Reinerth, *Wohnbau*, pp. 12 ff.; *Chron.*, pp. 25-6.

<sup>6</sup> *Ibid.*, pl. xi, 16.

<sup>7</sup> *Ibid.* 1.

<sup>8</sup> *Ibid.* 4, cf. *SV.* vii, fig. 3.

<sup>9</sup> Reinerth, *Chron.*, pl. xi, 12.

<sup>10</sup> *Schweiz.*, fig. 55.

höfen ware). Finally, deep jars<sup>1</sup> suggest comparison with the Danordic funnel-necked beakers.

The most distinctive decoration consists of zig-zag ribbons, reserved in a belt of furrowed hatchings as in Münchshöfen ware. And milled rims are common as in that fabric. Finally, knobs and plastic strips, sometimes 'arcaded' below the rim, were used.

We are allowed to infer from Reinerth's report that the small trapezoid celts with rectangular cross-section, described as characteristic of the 'Nordic' province, occur in this settlement, and the shoe-last chisels of late Hinkelstein form are expressly mentioned. Bored implements are represented by Danubian axe-hammers like Fig. 22 d, and symmetrical hammer-axes like Fig. 56.

*Stone  
imple-  
ments*

Of tools of flint and bone, ornaments, animal remains, or grains found in this village nothing has so far been published.

*Affinities:  
Reinerth's  
view*

Reinerth<sup>2</sup> has described this culture as the result of a mixture between Danubian and Nordic elements. The latter would be due to the Corded Ware folk and would be represented above all by the *megaron* house, the celts with rectangular cross-section, the hammer-axes, and certain elements in the ceramic forms and ornaments. However, the *megaron* house is not Nordic, but was derived from the south-east; the rectangular section of the celts is conditioned by the method of manufacture, sawing, and has, therefore, nothing in common with the Scandinavian flint celts that Reinerth takes to be the model;<sup>3</sup> even the hammer-axes can be paralleled in such purely Danubian stations as Butmir, and the pottery, as we saw, is essentially Danubian II.<sup>4</sup> Influence from Corded Ware is theoretically possible, but remains to be demonstrated. Hence we regard the neolithic elements in Aichbühl I as essentially Danubian, and the site as an outpost of Danubian II culture,<sup>5</sup> such as Reinecke suggested we should find, over ten years ago.<sup>6</sup> But we may be prepared to admit that the Danubian culture was here blended with another from which the idea of pile-dwellings was derived, and that this second culture was 'epipalaeolithic' in origin.

*Criticism*

*Aichbühl  
I is Danu-  
bian*

<sup>1</sup> *Chron.*, pl. xi, 10 and 22.

<sup>2</sup> *Chron.*, pp. 28, 57.

<sup>3</sup> Cf. Vouga, *WPZ.* xi, p. 21, and Reinerth's reply, *Schweiz.*, p. 176.

<sup>4</sup> Reinerth does not admit a Danubian II at all, and so labels Münchshöfen ware 'ältere Aichbühler Keramik', *Chron.*, pp. 32 and 89.

<sup>5</sup> The identity of Aichbühl I and Danubian II (Jordansmühl and Münchshöfen) pottery has at last been clearly recognized by Bremer in a posthumous paper, *Real.* viii, pp. 237 and 332.

<sup>6</sup> *RGKBl.* xi (1916), p. 72.

*Extension to East Switzerland* It is clear that Aichbühl I does not stand alone. An identical type of pile house was inhabited on Wauwil Moor (Schötz I).<sup>1</sup> That settlement as well as others on the Lake of Constance, at Moosseedorf, Steckborn, Greng, and even Guévaux on the Lake of Geneva, have yielded 'older Aichbühl' pottery.<sup>2</sup> We have already noted the distribution of the shoe-last chisels and Danubian hammer-axes over the same area. So now we see that the lakes and swamps of Eastern Switzerland as well as Wurtemberg were colonized first by a people possessed of an essentially Danubian culture. It would of course be these who introduced the cultivation of *Triticum monococcum*.

The relative date of this colonization is given by the Danubian connexions; it cannot be earlier than an advanced phase of our Period II.

*Flood Aichbühl II* On the Federsee Aichbühl I was overwhelmed by a flood. Its place was eventually taken by a Moor-village, Aichbühl II, after the ruins of the first settlement had already been overlaid with peat and when the lake had shrunk substantially. The new village consisted of two-roomed houses smaller than those of Aichbühl I; the trunks and planks forming the floors were laid directly on the peat which was evidently now practically dry. The houses were arranged along regular streets which were not corduroyed.

*Schussenried pottery* The pottery in this settlement included obvious descendants of Aichbühl I ware and apparently the typical Schussenried pottery. The principal types of the latter are cups and jugs, conical and hemispherical dishes, and large jars all closely resembling the Michelsberg forms described below, together with ladles with solid handles. Tulip beakers and one or two other Michelsberg shapes are missing.

*Decoration* The characteristic feature of this pottery is its decoration, always executed in furrowed technique. The designs are arranged in panels, the favourite patterns being a zig-zag band reserved on a hatched field (Fig. 96). Rayed circles also appear. Warts and plastic mouldings were used as in standard Michelsberg ware. The associated implements are in no way distinctive.

*Distribution* This culture is represented in six settlements from Cannstatt on the Neckar to the Lake of Constance.<sup>3</sup> Sherds of Schussenried ware also occur in lake-dwellings and on Michels-

<sup>1</sup> *Schweiz.*, p. 79, fig. 13.

<sup>2</sup> *Ibid.*, p. 232; it must be remembered that Reinerth tends to confuse the

most various elements under this unhappy term.

<sup>3</sup> Paret in *Germania*, 1924, pp. 60 f.



berg. Rather similar fabrics are met in Bohemia where they are rightly assigned by Stocký<sup>1</sup> to the Jordansmühl group. Indeed the Schussenried jug is just a variant of the Bohemian Jordansmühl form, while the Schussenried ornament is obviously derived from that of Aichbühl I. The whole culture may then be regarded as a continuation of that civilization, with the Danubian element recessive and the epipalaeolithic dominant. Reinerth,<sup>2</sup> however, would recognize in Aichbühl II a western element, represented first in the pottery of the Lake of Constance and then also in the Michelsberg culture to be described below. It is time, therefore, to turn to Western Switzerland, whence the western element would ultimately be derived.

*Affinities*

### III. THE LOWER NEOLITHIC OF THE WESTERN LAKES

Fortunately, we are well documented as to the beginnings of civilized life in Western Switzerland, thanks to the careful excavations of Dr. Paul Vouga on the shores of Lake Neuchâtel. From stratigraphical observations at four stations, Auvernier, Bevaix, Cortaillod, and Port Conty, he was able to distinguish four successive phases of culture<sup>3</sup> which he terms Lower, Middle, and Upper Neolithic, and Chalcolithic respectively. Sterile strata, apparently due to floods, intervened between Lower and Middle and again between Middle and Upper.

*Stratification on L. Neuchâtel*

In opening up the Lower Neolithic level at Auvernier<sup>4</sup> Vouga revealed a civilization, hitherto virtually unknown and even unsuspected, that obviously represents the oldest neolithic civilization in Western Switzerland.<sup>5</sup>

*Lower Neolithic*

The Lower Neolithic pottery is remarkably fine, admirably fired, smooth, and often polished, and grey or black in colour. The fragments seem to belong to round-bottomed bowls or biconical jars with flat bases. Perforated lugs, generally attached at the keel, are the only handles. Ornaments are limited to bosses or plastic strips applied horizontally, save that linear incisions were observed on one sherd and stripes of pitch on another.

*Pottery*

The celts are small and not really typical, though some have

*Celts*

<sup>1</sup> PZČ., pl. LVI, 22.

<sup>2</sup> Chron., p. 39.

<sup>3</sup> All are represented at Auvernier, the first two only at Cortaillod and Port Conty, and the last three at Bevaix, *AsAg.* iv, p. 278.

<sup>4</sup> *AsA.* 1921 and 1922.

<sup>5</sup> Reinerth denies this because it is

fatal to his typology. Instead of the admirably excavated and promptly published finds of Vouga from four sites, he prefers to accept results obtained, but never published, at Treytel, where only two strata were discovered, the uppermost obviously Chalcolithic, *WPZ.* xi, p. 102.

squared small sides.<sup>1</sup> But their makers already displayed a preference for greenstones such as 'jadeite'.<sup>2</sup> No bored axes were encountered.

*Horn hafts* The celts were fixed into horn sleeves of two types.<sup>3</sup> One is the 'perforating haft', designed to be fitted through the shaft and kept in position by a transverse peg; the other type is short and blunt but not trimmed to a heel. Perforated horn picks and axes also occurred and might be armed with a stone blade.

*Flints* The flint, a translucent variety not known native in the vicinity, was worked into simple blades and end-scrappers with a minimum amount of unilateral retouching. A triangular chip

*Arrow-heads* might have been an arrow-head, and the transverse arrow-head (*petit tranchet*)<sup>4</sup> is also represented. Rounded bone-points, sharpened at each end, may also have served as tips for darts or arrows.

*Textiles* Among other industrial products was a bone comb. This, like certain clay loom weights, implies an acquaintance with weaving though 'spindle whorls' were absent. Basketry is illustrated by an excellent coiled basket.

*Animals* All the domestic animals enumerated in the text on p. 163 were represented.<sup>5</sup> The local wild animals included *Bos primigenius* and the weasel (*Mustela martes*). Fish remains were almost absent. The animals must have been cut up off the platforms on which the houses stood, for the bones found between the piles belong to the edible portions only. Among this

*Cannibalism* culinary refuse were found stray human bones split, like the animal bones, to extract the marrow. Moreover, 'cranial amulets'—small, perforated disks cut from the human skull—were found at Porty Conty. So perhaps the first neolithic Swiss varied their diet with human flesh!

*Ornaments* Besides the 'cranial amulets', perforated boars' tusks and bone pendants, notched or perforated, and sometimes engraved with linear patterns were worn. The person was painted with red ochre.

*Painted pebbles* A curious discovery was a series of oval pebbles, each 1 to 3 cm. long, encased in a tube made from the fibrous sheath of a reed. When discovered the pebbles exhibited traces of painting. They have been compared to the celebrated pebbles from Mas d'Azil and Birsek near Basel.

<sup>1</sup> According to Reinert's predominantly late Nordic types!

<sup>2</sup> WPZ. xi, p. 21.

<sup>3</sup> *Dawn*, fig. 122, A and B.

<sup>4</sup> *Antiquity*, ii, p. 406, K.

<sup>5</sup> *AsAg.* iv, pp. 252 ff.

We may sum up the outstanding features of the complex as follows:

Its authors were essentially agriculturalists and pastoralists, engaged also in hunting, but averse to a fish diet, and related by only casual commercial links to the outside world. *Summary*

Their social solidarity is implied in their mode of life.

As possible revelations of their spiritual life we can only point to the painted pebbles, the cranian amulets, and the traces of cannibalism.

Art found expression on pottery only in simple plastic decoration.

Weaving and basketry were practised, and the potter had attained no mean level of skill.

The Lower Neolithic settlements on Lake Neuchâtel apparently perished in flames. Above their ashes lies a sterile layer of lacustrine sand and slime, believed to have been formed in an epoch of high waters. Only after the water had again sunk were the same old sites reoccupied. *Middle Neolithic*

The new culture is different from and in some respects inferior to its predecessor, and conforms rather to the type recognized by older investigators as 'early neolithic'. The new huts rested on oak piles, normally split, in contrast to the unhewn stems previously in vogue. The celts show no change, but the old perforating horn haft has been discarded entirely, and the other type has been improved by trimming to produce a regular heel. Rough perforated stone axe-hammers of late Danubian type like Fig. 56a appear. The translucent imported flint of the Lower Neolithic is replaced by a local opaque variety. Though the flaking is still crude, triangular arrowheads, sometimes with a concave base and others with a rudimentary tang, were now manufactured. A horn 'boomerang'<sup>1</sup> was also found. The pottery, on the other hand, is far inferior to the older ware. It is now the typical rough, gritty fabric, badly fired and unpolished, that has usually been regarded as the earliest Swiss earthenware. Handles are still represented only by pierced lugs below the rim, and ornamentation is limited to applied plastic strips. Intercourse with the south is perhaps indicated by a fragment of white coral. *Heeled hafts*  
*Bored axes*  
*Boomerang*

The animal remains from the Middle Neolithic levels show a much higher proportion of game than in the Lower. Hunting is gaining ground at the expense of stock raising. *Imports*  
*Increase in game*

It is now possible to inquire what was the origin of the first

<sup>1</sup> *AsA.* 1922, p. 13.

*Origin of western neolithic* neolithic civilization of Western Switzerland. Was it primarily inspired from the Danube valley as the author suggested,<sup>1</sup> or did it come from the west as Reinerth contends?

*Chronology* The sequence just established in the first place provides the basis for a chronological comparison between West Swiss cultures and those of the Danube basin. The axe from the Middle Neolithic layer is a type that we should expect in Danubian II deposits, but that might survive into Period III. It is at any rate the first unambiguously Danubian object from Lake Neuchâtel. The flood levels afford other links. Reinerth<sup>2</sup> identifies that intervening between Lower and Middle Neolithic with that separating Aichbühl I and II; in that case Lower Neolithic equals Danubian II. Vouga,<sup>3</sup> whom we follow, on the other hand, holds that the Aichbühl flood coincides with that interposed between Middle and Upper Neolithic. In that case Lower Neolithic is to be equated (very roughly) with our Period I, the next phase falling in Period II as the axe-hammer suggests.<sup>4</sup>

*Lower Neolithic Period I* Let us next consider the traits revealed by our analysis of Lower Neolithic civilization. Certain features might be designated epipalaeolithic. The painted pebbles are suggestive of the Azilian; the habitations, the horn-work, and the suspicion of cannibalism point to Maglemose.

*French analogies* But the agreements with the cave culture of South France<sup>5</sup> are surprisingly numerous and significant. The pebble celts, the transverse arrow-head, the double-pointed bone tip, the cranian amulets, the boars' tusk pendants all recur in that complex and some are peculiar to it. On the other hand the pottery looks Danubian, though, in view of our sad ignorance of South French ceramics, it is possible that a similar technique flourished there too.

*Danubian features*

Unpleasant though it be to have to appeal to the unknown, it really looks, then, as if this Lower Neolithic civilization was in truth western as Reinerth says (though in a very different sense). Tempting though it would be to derive, in the name of economy, the truly neolithic elements in West Swiss civilization from the Danube basin, nothing obliges us to do so, and the stratigraphical evidence is definitely against it. It is after

<sup>1</sup> *Dawn*, p. 247. A form like *Antiquity*, ii, p. 400 D, is distinctly Danubian.

<sup>2</sup> *Chron.*, p. 62.

<sup>3</sup> *WPZ.* ix, p. 23.

<sup>4</sup> In view, however, of the marked retardation of all Danubian culture in

South-West Germany, Lower Neolithic need not begin before Period II. Cf. chronological table.

<sup>5</sup> Cf. Bosch-Gimpera in *Real.* iv, pp. 22, 45.

all intrinsically probable that secondary centres of culture should have arisen on the shores of the Gulf of Lyons, and that radiations thence should have travelled up the Rhône. As South French culture would, like the Danubian, be in the last resort inspired from the Aegean, the similarity of Lower Neolithic pottery to Danubian would not be surprising. We therefore conclude that the neolithic civilization of West Switzerland was western in origin though grafted on a vigorous epipalaeolithic substratum.

As to Middle Neolithic culture we should probably see in it a mixture between the original western and secondary 'northern', i.e. Danubian elements. By the time of its rise the area east of the Aar would have been occupied by those settlers from the Danube basin whose expansion was traced in a previous paragraph. Even beyond the frontier stream the Western culture would have absorbed some Danubian elements.

However, in that area affairs had been complicated by the intrusion of new ethnic elements from the south whose influence is expressed on Lake Neuchâtel by the coral beads and which are perhaps partly responsible for the decline of culture observed in the period. The path of the intruders is marked by the cist graves of the Chamblandes culture,<sup>1</sup> so named from the type site near Lausanne. The graves in question are small, rectangular or trapezoid cists, walled and covered with thin stone slabs, and measuring as a rule 1 m. × 0.50 m. × 0.50 m. Normally each contained a single corpse, but in some cases two or more bodies were deposited in the same tomb either simultaneously or at different times. Graves of this type are found<sup>2</sup> along the Aar as far north as Basel, on the Upper Rhône, and then on the other side of the Great Saint Bernard in the Aosta valley, and elsewhere in Upper Italy.

According to Schenk<sup>3</sup> three racial types—all dolichocephalic—are met in the graves of Chamblandes. These he describes as (i) the Baumes-Chaud-Crô-Magnon race, (ii) the Grimaldi race (i.e. a type akin to Verneau's negroids), and (iii) a Nordic stock. The latter is alleged to be represented only by two secondary<sup>4</sup> interments. The first two types were comparatively short (1.58 m.) but muscular. In adjacent cemeteries brachycephals were also met.

<sup>1</sup> Tschumi, 'Die steinzeitlichen Höckergräber der Schweiz'; *AsA.* 1920 and 1921.

<sup>2</sup> See map in *AsA.* 1920, p. 75.

<sup>3</sup> *Suisse préh.*, pp. 546-8: cf. Schliz, *AfA.* vii, p. 254.

<sup>4</sup> Schenk, p. 460.

*Lower  
Neolithic  
western  
in origin*

*Danubian  
elements  
in Middle  
Neolithic*

*Cham-  
blandes  
culture*

*Graves*

*Physical  
types*

*Trepanation* In a corresponding cemetery at Villeneuve in the Aosta valley one skull had been trepanned,<sup>1</sup> and cranian amulets were found at Chamblandes.<sup>2</sup>

*Ornaments* The furniture of these graves is regrettably poor. Lumps of red or yellow ochre were regularly supplied to the departed. Other ornaments were perforated boars' tusks, a conical stone button with V perforation, Mediterranean shells (*Tritonium*, *Buccinum* & *Pectunculus*), bits of red coral, and small jet<sup>3</sup> beads.

*Bored axe* Apart from quite atypical flakes the only implements or weapons discovered were a wedge-shaped stone axe, beautifully polished, flaked celts and lance-heads of flint, so rough that they have been called 'Acheulean', and a flint celt ground only at the edge, found together with flint lance- and arrow-heads. One of the latter had a concave base. Rough sherds were sometimes found, and a layer of ashes and burnt bones, or, in other cases, fine sand regularly covered the floor of the tombs. A curious plaque of calcareous schist lay under the thorax of one individual. It was 14 cm. long and 1 cm. thick, and bore a cross incised on a projection at one end.<sup>4</sup>

*Date* Schenk, Schliz, Tschumi, and Ischer inclined to regard these graves as in part epipalaeolithic or in any case very early. Heierli considered them relatively late, and Reinerth has come to the same conclusion.<sup>5</sup> Its correctness is proved by the button from an undisturbed grave at Glis. The axe-head is comparable to one from the Middle Neolithic on Lake Neuchâtel, but came from a 're-used' tomb. It is further highly unlikely that the Great Saint Bernard could be used in early neolithic times. Hence we conclude that, as far as a precise date is assignable to the Chamblandes culture, it should be ranked as Middle Neolithic.

*Origin* Graves of the Chamblandes type do not belong to the Lake-dwellers; there is no sort of correlation between the cemeteries and lake villages,<sup>6</sup> and the skeletons contained in the tombs were quite unlike those found in the settlements. The culture was rather due to an intrusive and semi-nomadic tribe of very primitive people who came, to judge by the Mediterranean shells and many parallels south of the Alps, from North Italy.<sup>7</sup>

<sup>1</sup> *JSGU*. xvi (1924), p. 45.

<sup>2</sup> Schenk, *l.c.*, p. 479.

<sup>3</sup> *Ibid.*, p. 456.

<sup>4</sup> *JSGU*. xvii (1925), p. 46, fig. 6.

<sup>5</sup> *Schweiz.*, p. 211.

<sup>6</sup> Schenk, p. 462; Forel, *Le Léman*, iii, p. 468. Reinerth disagrees.

<sup>7</sup> Barocelli would reverse the movement; see *JSGU*. xvi, p. 36; *BSPA*. viii, 73. Note, however, that a flint cul-



## IV. UPPER NEOLITHIC AND CHALCOLITHIC

The civilization of the Upper Neolithic levels on Lake Neuchâtel is far less dissimilar from the Middle than the latter was from the Lower Neolithic. Yet it was preceded by a flood that interrupted the continuity of settlement, and two of the sites were not reoccupied. The distinguishing features of the Upper Neolithic are the emergence of two new types of horn sleeve, one with an elongated spur and the other with a split or morticed spur,<sup>1</sup> and the appearance of true battle-axes (Fig. 95a). The latter, judging by the single specimen found *in situ* (at Bevaix),<sup>2</sup> were still rather rude, with a cylindrical butt growing directly out of the swelling that re-enforces the shaft-hole.

*Upper  
Neolithic*

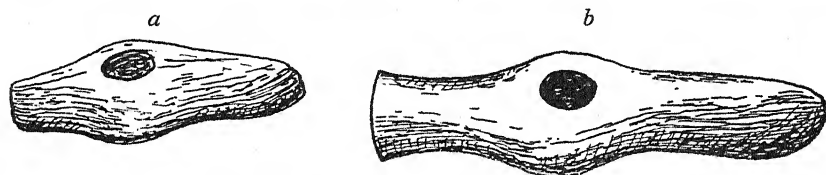


FIG. 95. Upper Neolithic  $\frac{1}{4}$  and chalcolithic  $\frac{1}{2}$  battle-axes, L. Neuchâtel

The Chalcolithic culture is admittedly continuous with the foregoing. The most important innovations are the appearance of sherds ornamented with cord impressions, the importation of Grand Pressigny flint from Western France, and the production of fine flint points and arrow-heads by pressure-flaking. A battle-axe from this level at Auvernier was more graceful than that found lower down at Bevaix, the butt being separated from the body by a distinct neck (Fig. 95b).

*Chalco-  
lithic*

The civilization represented in these two levels is fairly evenly distributed all over Switzerland; the contrast between east and west is now far less sharp, though it still persists. Apparently the two original cultures had come to a mutual accommodation. But outside Lake Neuchâtel, it is still impossible to divide up the material more precisely.

*Uniform-  
ity of  
Swiss cul-  
ture at  
this date*

The continuation of the native civilization is disclosed in the pottery that is now everywhere the coarse and gritty fabric

*Pottery*

ture of Campignyan aspect flourished in Italy as in North France. Reinerth, too, refuses to distinguish this culture

from that of the lake-dwellings.

<sup>1</sup> Childe, *Dawn*, fig. 122, C-D.

<sup>2</sup> *AsAg.* iv, p. 281, pl. II, i.

long regarded as typical of the lake-dwellings.<sup>1</sup> Many of the forms<sup>2</sup> are reminiscent of the Michelsberg culture, described in the next section, whereas others illustrate the foreign relations which must now be discussed.

*Corded Ware invasion* In the first place it is clear that Switzerland was at this period overrun by the nomadic makers of Corded Ware.<sup>3</sup> The barrows that are the characteristic funeral monuments of such tribes have been found, as we saw,<sup>4</sup> at Schöfflisdorf, Zigholz, and elsewhere. Moreover, characteristic cord-ornamented beakers have been found in many lake villages from the Lake of Constance to Lake Neuchâtel and the Lake of Geneva.<sup>5</sup> And the stone battle-axes which we find in many settlements are obviously due to the presence of these intruders. The same factor must account for the changes in head-form in the direction of dolichocephaly recorded by all the anthropometrists. From the documents collected from the lake villages themselves, we must infer that the incursion of corded ware makers was more than a mere incident. Some of the battle-axe folk must have established themselves as overlords among the lacustrine peasants. This conquest may, indeed, have accelerated the unification of Swiss culture alluded to above. The date of the invasion is a little vague; a battle-axe from one of the barrows at Schöfflisdorf corresponds to that found in the Upper Neolithic level at Bevaix,<sup>6</sup> but corded pottery appears first in the overlying strata on Lake Neuchâtel.

*Relations with Altheim group* At the same time, or even earlier, influence from the other Battle-axe folk of Danordic affinities, living in the Eastern Alps, is attested by the occurrence of polygonal battle-axes (like Fig. 77)<sup>7</sup> in the eastern area. Even flint sickles, similar to those found farther east from Volhynia to Bavaria, are found in lake-dwellings as far west as Lake Neuchâtel and the Lake of Geneva.<sup>8</sup> Possibly some of the copper objects, noted below, reached Switzerland from the same quarter.

<sup>1</sup> *AsAg.* iv, p. 281, pl. I, 1.

<sup>2</sup> Reinerth, *Schweiz.*, fig. 59, 3 and 19 (jugs like our Fig. 96), 12 (bowls like *Dawn*, fig. 126, 13), and fig. 60, 2 (like our fig. 99d).

<sup>3</sup> Reinerth, ignoring the stratigraphical evidence, still confuses this incursion with the much earlier Danubian invasion; the Danubian Aichbühl ware is for him the domestic pottery of the battle-axe folk ('Gebrauchskeramik der Schnurkeramiker,' *Schweiz.*, p. 149;

*Chron.*, p. 39). Vouga's excavations supply the refutation.

<sup>4</sup> p. 151 above.

<sup>5</sup> List of sites in Reinerth, *Schweiz.*, p. 232.

<sup>6</sup> In view of the tendency of this industry to degenerate, too much reliance should not be laid on the sequence noted by Vouga.

<sup>7</sup> Reinerth, *Schweiz.*, p. 258, and fig. 79.

<sup>8</sup> *Ibid.*, p. 205, fig. 83, cf. p. 122 above.

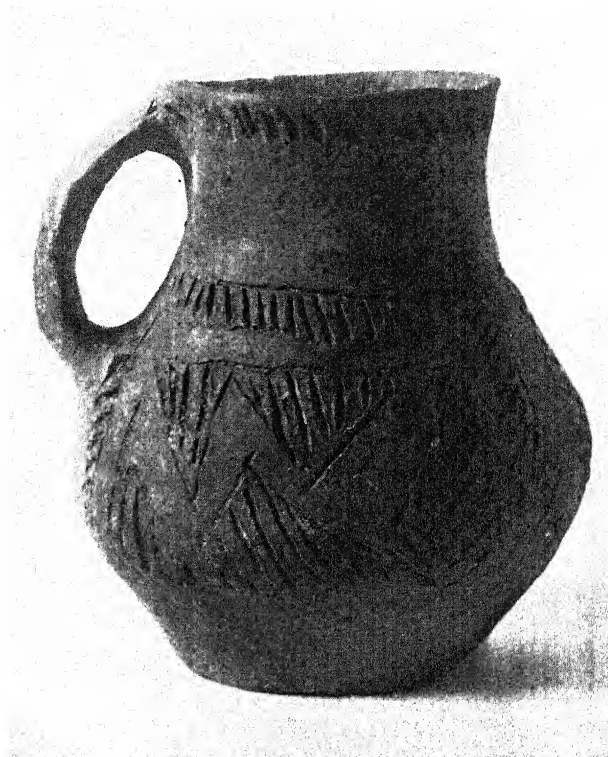


FIG. 96. Schüssenried jug, Canstatt. M. Stuttgart.  $\frac{1}{5}$

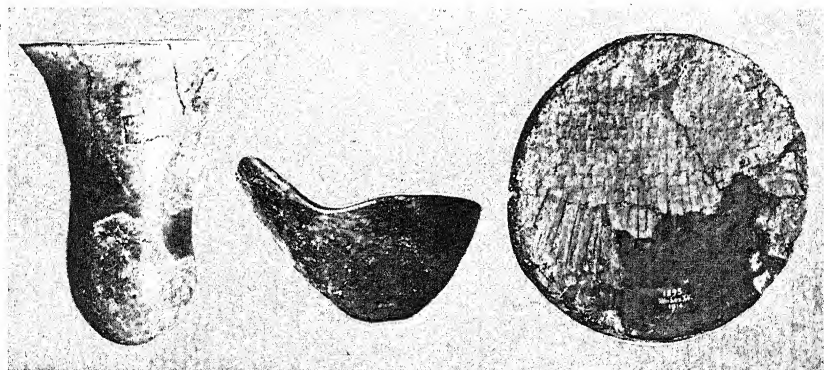
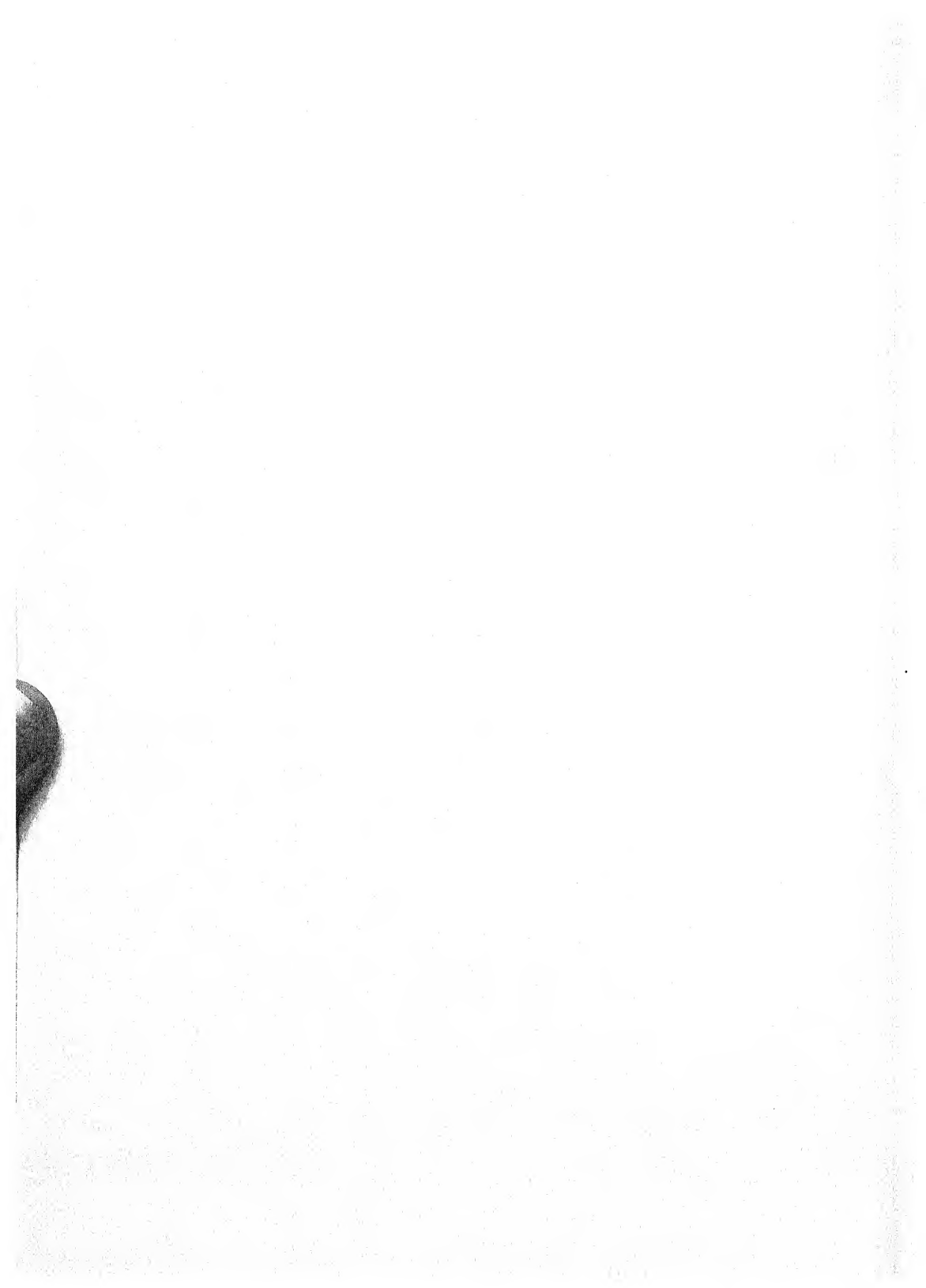


FIG. 97. Tulip beaker, dipper and baking plate, Weiher. After Sulzberger.  $\frac{1}{5}$



Relations with the west were particularly lively at this epoch. They are illustrated in the first place by actual imports of Grand Pressigny flint (the material was brought in raw and worked locally),<sup>1</sup> and then by the stone celts with pointed butts which have such familiar analogues in Brittany. At Lüscherz a symbolic double-axe of copper, with a hole too small to take a genuine shaft (like Fig. 107), was found,<sup>2</sup> and the form was imitated in stone (Fig. 98b) at Lüscherz and elsewhere.<sup>3</sup> This type too reached Switzerland across France, and so it is possible that some of the copper implements, particularly the triangular daggers that have early parallels in Savoy,<sup>4</sup> were brought to Switzerland from the south-west up the Rhône. Finally, certain ceramic types, notably polypod bowls from Greng and Mörigen,<sup>5</sup> correspond exactly to a form current in South France during the Bell-beaker period.<sup>6</sup>

Southern influence, transmitted probably either up the Rhône or across the Alps from Upper Italy, is revealed in the quite numerous copper implements that now begin to appear. Most common are knife-daggers, either kite-shaped without rivets or triangular with two or three rivet-holes in a straight line. These copper daggers were then imitated in stone<sup>7</sup> like the double-axes. The Cypriote dagger found stray in the Zihl valley, on the other hand, must have come from the east, since it represents an extension of a well-marked trade route up the Danube, as we shall see.<sup>8</sup> The heavy fighting hammer-axe of copper from Bremgarten,<sup>9</sup> too, is an eastern type to be connected with that from Lužice in Moravia. Finally, bone pins with crutched, disk- or ring-heads<sup>10</sup> were being manufactured at this time, and evidently imitate Early Bronze Age metal pins current in Bohemia, Hungary, Italy, or South France.<sup>11</sup>

The composite civilization in which these elements were fused apparently lasted a long time. Taking the Corded Ware invasion as its upper limit it can scarcely have begun much before the middle of our Period III. The celts with pointed butts belong to the end of that period, but the Chalcolithic

<sup>1</sup> Reinerth, *Schweiz.*, p. 106.

<sup>2</sup> Ischer, fig. 22, 1.

<sup>3</sup> These are termed by Reinerth, *Schweiz.*, p. 188, 'Westische Streitäxte': they are western in that the proto-types reached Switzerland from the west.

<sup>4</sup> Déchelette, ii, pp. 134 ff. and fig. 60, 3. *Real.* iv, p. 56.

<sup>5</sup> Reinerth, *Schweiz.*, figs. 59, 18.

<sup>6</sup> Cf. *Dawn*, fig. 135; *Real.* iv, pl. 32.

<sup>7</sup> Cf. *Dawn*, fig. 124, d.

<sup>8</sup> Ischer, fig. 22, 15; cf. p. 218, below.

<sup>9</sup> *Ibid.*, fig. 22, 2; cf. fig. 128, a.

<sup>10</sup> Some are illustrated by Ischer, fig. 23, 1-5, 9-10.

<sup>11</sup> *Dawn*, fig. 136, a.

*Western relations*  
*Grand Pressigny flint*

*Double-axes*

*Polypod bowls*

*Copper*

*Daggers*

*Battle-axes*  
*Pins*

*Chronology*

culture of Switzerland may have lasted much longer. Though bronze implements are rarely found, the stray examples that are forthcoming and, still more, the imitations in bone of bronze pins that do not belong to the earliest phase of our Period IV, show that the same old lake-dwellings were occupied by a stone-using folk long after bronze was in regular use in the Danube valley. In fact, the Bronze Age on the lakes only begins in our Period VI.<sup>1</sup>

## V. THE MICHELSBERG CULTURE

In the Rhine valley and in the highland zone between the Rhine and the Danube, the mixed civilization of the Upper

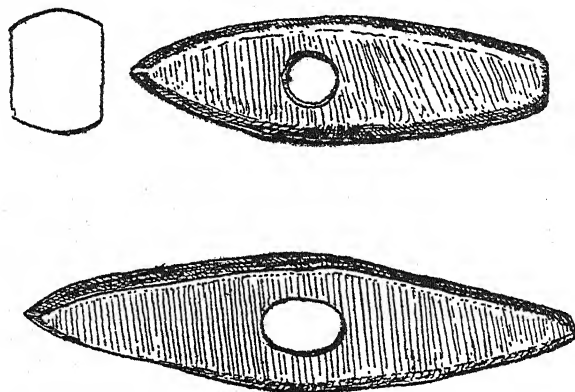


FIG. 98. Aichbühl hammer-axe and Western battle-axe, after Reinerth.  $\frac{1}{3}$

Neolithic and Chalcolithic periods in Switzerland has a counterpart in the so-called Michelsberg culture together with that of Schüssenried (already described) which is just a special form of it. It takes its name from a hill or rather a projecting spur, overlooking the plain of the Rhine above Unter-Grom-

<sup>1</sup> Cf. p. 354 below and reference there given.

ADDITIONAL NOTE. During the last phase of the Swiss Stone Age the growing dryness, with the decay of the forest that it entailed, rendered possible the occupation of various sites away from the lake-shores; and so we find settlements in cave or on hills apparently dating from this period. From the rough sherds, celts, and flint-chips that have been collected in them it is not possible to assign such settlements to

Lake-dwellers, Chamblandes folk, or corded ware makers with any confidence. Reinerth would abandon altogether the old distinction between land-settlements and lake villages in so far as ethnological conclusions were based thereon. The material needs no special description, but it may be noted that the peculiar points (borers) from Dickenbännli near Olten are not, as some have thought, epipalaeolithic. Reinerth, *Schweiz.*, p. 207.



bach, some twelve miles north of Carlsruhe. The material from the type station may be matched at a multitude of sites in the valleys of the Rhine and its tributaries from Belgium to the Lake of Constance, with outliers on the Upper Danube, near Salzburg, in Bohemia, and on the Saale.

The best pottery is closely allied to the ware of Aichbühl I—*Pottery* grey or black and nicely polished. The coarse ware, used for large vessels, is, on the other hand, gritty and badly fired. The characteristic shapes are the tulip beakers (Fig. 97a), jars like Fig. 99a but often with pointed bottoms, the tall pots with arcaded rims (Fig. 99d), the squat jugs (Fig. 96), the deep, slightly keeled dishes, dippers with broad tongues projecting to serve as handles (Fig. 97b), and flat clay disks used apparently for baking (Fig. 97c). On the west bank of the Rhine we have in addition very large globular jars with trumpet-like necks.<sup>1</sup> Decoration is virtually limited to plastic strips with finger-tip impressions and nipple-like bosses, especially on the jugs. Incised decoration, always deeply furrowed, is exceptional. We have chequer patterns and hatched ribbons at Michelsberg and in Alsace,<sup>2</sup> and herring-bone motives on the shores of the Lake of Constance.

The inventory of stone implements is not very instructive. *Celts* Small pebble celts were used, greenstones being preferred. In some settlements, however, fine implements, often of greenstone, with pointed butts and oval or pointed-oval cross-section have been found.<sup>3</sup> The small celts were sometimes hafted with the aid of horn sleeves (Fig. 100).<sup>4</sup> Some of these were trimmed to produce a rudimentary heel (as in *Dawn*, Fig. 122, c). *Horn hafts* Perforated stone axes are rare and are usually restricted to the simple wedge-shaped axe-hammers common in the Danubian cultures, but the polygonal battle-axe occurred at the Goldberg, perhaps as an intruder. Barbed flint arrow-heads, bone tips, a wrist-guard, and even two bows of yew<sup>5</sup> attest the practice of archery. Antler axes and picks, so primitive as to recall Kitchen-midden types, were in general use. *Horn-work* Metal was almost certainly current. Flat celts and an awl of copper *Copper* were found at Weiher,<sup>6</sup> copper and amber beads at Altenbamburg in the Rhenish Palatinate.<sup>7</sup> A copper double-axe

<sup>1</sup> Forrer, *op. cit.*, p. 24 and fig. 21, (Alsace), Forrer, p. 26; Weiher, *MAGZ.* xxix, pl. XII, 4.

<sup>2</sup> Forrer, *op. cit.*, pl. IV a-d.

<sup>3</sup> Schliz, *Kbl. f. Anthr.* 1908, 9-12, p. 4; Reinerth, *Chron.*, p. 45.

<sup>4</sup> Goldberg, M. Stuttgart; Achenheim

<sup>5</sup> *MAGZ.*, l. c., p. 168.

<sup>6</sup> *MAGZ.* xxix, pl. XII, 7.

<sup>7</sup> Information from Dr. Sprater.

(like Fig. 107) was picked up in the immediate vicinity of the settlement near Kottenheim, north of Mayen,<sup>1</sup> and a copper flat celt was associated in a hoard<sup>2</sup> with the pointed-butted implements that belong to the period.

*Textiles* Though spindle whorls were rare, we have from Weiher remains of woven fabrics in flax and bast as well as bits of plaited straw. The baking plates often exhibit on one side the impression of straw mats (Fig. 98).

*Grains* The Michelsberg folk cultivated emmer and barley, using the 'Egyptian' sickle armed with serrated flints.

*Animals* Their domestic animals included cattle of both *Bos brachyceros* and *Bos primigenius* stocks, sheep (*Ovis aries palustris*), swine (*Sus scrofa palustris*), goats, and dogs (*Canis palustris*). Horse bones are rare, and almost certainly belong to the wild horse.<sup>3</sup>

*Harpoons* It is nevertheless clear from the numerous bones of game found in all settlements that the Michelsberg folk were great hunters. Horn harpoons found at Weiher and in Alsace<sup>4</sup> show that they engaged in fishing.

*Pile-villages* Three types of settlement are known. The pile-villages on the shores of the Lake of Constance have yielded a typical series of Michelsberg vases—tulip beakers, round-bottomed jars, squat jugs, carinated bowls, and dippers.<sup>5</sup> Reinerth assigns this group to a peculiarly early position for reasons that are far from convincing. There are remains of pile-dwellings in the beds of the Rhine (especially near Mainz) and of the Ill. No pottery has been found in them, but they are closely related to land stations of Michelsberg type and may be the earlier homes of the people who built the latter.

*Moor-villages* The second type of settlement is illustrated by the Moor-village of Weiher near Thayngen<sup>6</sup> in North Switzerland. The village (or rather the two successive villages) lay on a low, peat-covered island rising in the middle of a one-time lake, and spread out beyond the islet on to the bog surface. The huts on the island have perished and only refuse-pits or silos remain. The peat has preserved the marginal huts. They stood on a 'raft' of birch logs laid directly on the peat. The floor proper consisted of split oak-trunks, some 0.45 m. thick, covered with a layer of mud plaster. Posts of birch wood,

<sup>1</sup> *By.* 123, Beilage, p. 105; 127, p. 109.

<sup>2</sup> *BRGK.* x, p. 156.

<sup>3</sup> Paret, *UW.*, p. 30.

<sup>4</sup> *MAGZ.*, *l.c.*; Forrer, *op. cit.*, p. 22.

<sup>5</sup> Reinerth, *Chron.*, pls. IV-V; cf. Menghin, *Urgesch.*, p. 721.

<sup>6</sup> Sulzberger in *MAGZ.* xxix, pp. 163ff.

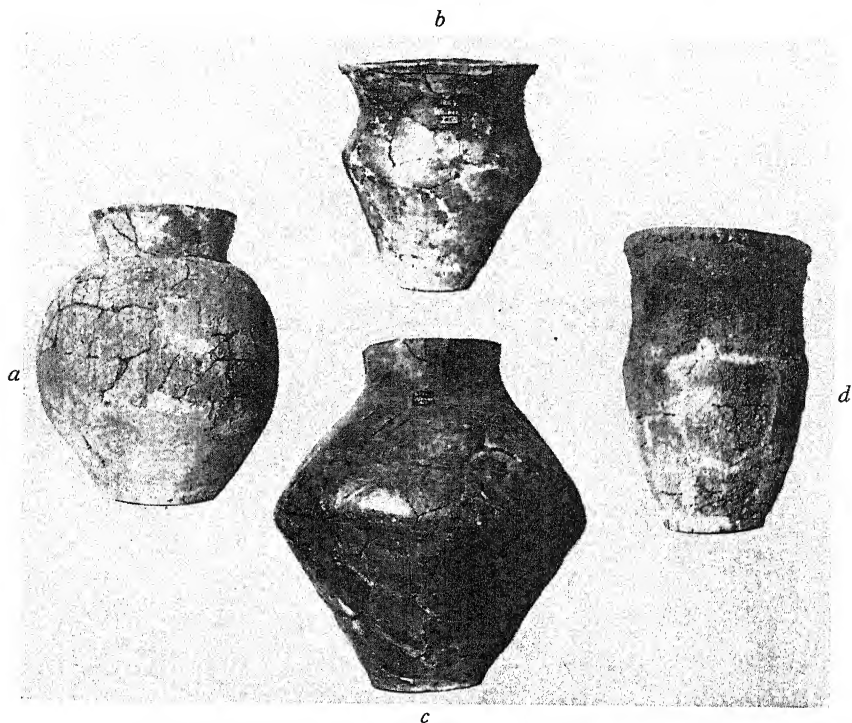


FIG. 99. Large jars, Weiher, after Sulzberger.  $\frac{1}{11}$

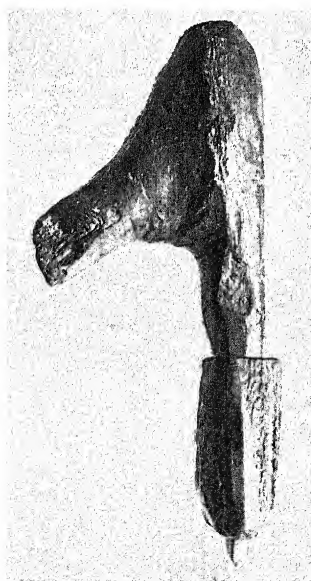


FIG. 100. Celt in horn sleeve, Weiher, after Sulzberger.  $\frac{1}{3}$



pointed at one end, were driven into the subsoil to keep the 'rafts' in place and support the house walls of wattle and daub. These platforms had needed several renewals owing to gradual sinking and perhaps to a catastrophic flood. The houses themselves were divided into two rooms, with a hearth in the front room as at Aichbühl. One house measured  $8 \times 4 \text{ m}^2$ , another  $6 \times 4 \text{ m}^2$ . The houses stood at intervals of  $2\frac{1}{2}$  to 3 m., with log-paved streets connecting them and log forecourts in front. A moat surrounded the village, and outside it ran a timbered way. Outside this again stood a defensive palisade.

The forest of oaks, willows, beeches, Norway maples, and ash came down to the very edge of the little marshy lake and the village that rested on it.

The majority of the Michelsberg settlements were, however, built on dry land and preferably on hills or defensible spurs. Besides the type station we should note the Goldberg near Boppingen in Wurtemberg, the Wartberg and Hexenberg above Heilbronn, and the heights near Mayen and Urmitz<sup>1</sup> on the Lower Rhine. The land villages were very frequently fortified. The first line of defence was represented by a broad, shallow trench.<sup>2</sup> At Mayen a palisade was erected within the circle of the trench and 25 m. from it for additional security. At Urmitz the moat was duplicated, an earth rampart rose between the two ditches, and inside the inner trench ran a palisade of stakes. The whole belt of fortifications was 26 m. wide. The causeways across the trenches and the space between the gaps in the wall and the palisade respectively had apparently been fenced in on either side by some wooden structure producing a narrow passage through which invaders would have to pass (Fig. 101). *Hill forts*

The actual dwelling places, found within these camps or isolated, were of two types. Most common are irregular pit-dwellings, partly sunk in the earth as at Michelsberg itself. On the Goldberg and at Mayen, on the contrary, men lived in small rectangular houses on the ground level.<sup>3</sup> The walls were supported by stout posts, there was a door on the short side and a fixed hearth. The area of these huts varied from  $4.7 \times 3.4 \text{ m}^2$  to  $7.3 \times 5.5 \text{ m}^2$ . *Houses*

At least on Michelsberg the huts were regularly arranged in rows on either side of distinct streets (Fig. 102).<sup>4</sup>

The usual burial rite was inhumation; the deceased was *Graves*

<sup>1</sup> *Mannus*, xvii (1925), pp. 161 ff.

<sup>2</sup> *PZ*, ii, pp. 1 ff.

<sup>3</sup> *Bj.* 127, pp. 108 f., figs. 26-7.

<sup>4</sup> Schumacher, *op. cit.*, p. 26.

interred, generally contracted, sitting or lying, with deliberately broken furniture. The grave was often dug in the dead man's hut which was then destroyed.<sup>1</sup> In Belgium, however, the regular rite observed was cremation.<sup>2</sup>

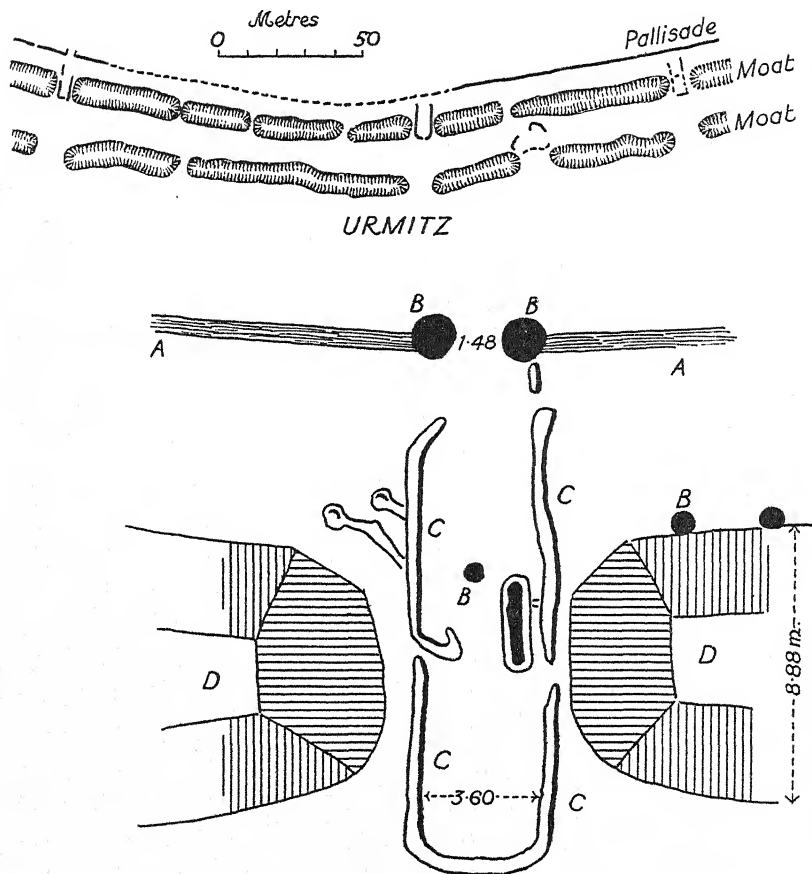


FIG. 101. Plan of Urmitz fortifications, after Schumacher.

*Physical type* The skulls belong to a distinct type regarded by Schliz as due to a cross between Alpine and Nordic stocks. They are mesati- to dolicho-cephalic.

*Date* The relative position of the Michelsberg culture in our chronological system is perfectly plain. Despite the patent resemblances in its pottery and horn-work to the culture of the Shell Mounds,<sup>3</sup> the Michelsberg culture cannot be placed

<sup>1</sup> Forrer, 'Rites funéraires en Alsace', *BSPF*. 1922, pp. 147 ff.

<sup>2</sup> *BSA. Brux.* xxxi (1924), 150 ff.

<sup>3</sup> Emphasized by Reinecke, *MZ.* 1908.



earlier than our Period III. The discoveries at Weiher and Aichbühl II show that it already belongs to a distinctly dry phase. At the last-named site, moreover, a culture of Danubian II origin preceded the foundation of Aichbühl II. On Goldberg the houses of the Michelsberg settlers overlie the pit-dwellings containing Rössen pottery, though at Michelsberg and

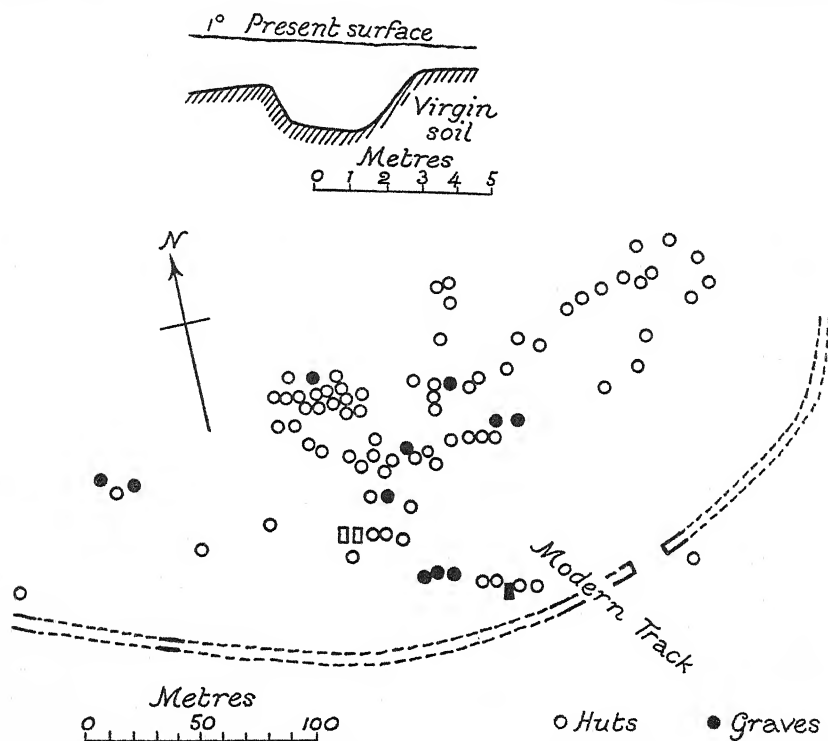


FIG. 102. Plan of Michelsberg, after Schumacher.

at Urmitz stray Rössen sherds were apparently found in the settlements. The upper limit of our culture is therefore clearly the latest phase of Period II.

The lower limit is rather more vague. Corded vases were found at Vaihingen (Wurtemberg)<sup>1</sup> and Urmitz.<sup>2</sup> Conversely, Michelsberg pots and baking-disks occurred in late Corded Ware barrows near Heilbronn.<sup>3</sup> A synchronism between the Michelsberg and late Corded Ware cultures is thus established, quite apart from the typological arguments adduced by

<sup>1</sup> *Fb. Schw.* xvii, p. 7.

<sup>2</sup> *Mannus*, xvii, p. 169.

<sup>3</sup> *ZfE.* xxxviii, pp. 317 and 343.

Reinerth. The discoveries of celts with pointed butt indicates a still later date; for in South-West Germany they belong to the Zoned-beaker phase, while in Savoy and the Jura they occur in Early Bronze Age graves.<sup>1</sup> In point of fact several zoned beakers were dug up inside the walls of the Urmitz fortifications.<sup>2</sup> We may therefore conclude that the Michelsberg culture occupies Period III, and probably lasts into Period IV. It is in fact strictly parallel in time to the Upper Neolithic and Chalcolithic phases in Switzerland.

*Distribu-* The culture just described was obviously at home on the  
*tion* Upper and Middle Rhine and on the Neckar. Thence it  
*Belgium* spread as far west as Brabant<sup>3</sup> and into part of France,<sup>4</sup> always  
 with typical tulip beakers. To the east we find the same type  
*Bohemia* near Salzburg<sup>5</sup> and in isolated hut-foundations<sup>6</sup> or graves on  
 the Eger and the Moldau in Bohemia, and there is a tulip  
*Thuringia* beaker from Auleben in Thuringia<sup>7</sup> and a dipper from  
 Zweyman in Saxony.<sup>8</sup> Reminiscences of Michelsberg types  
 may be seen in the pottery from cremation graves at Flieth and  
 Dedelow in the Uckermark. Whatever the last-named similarities  
 may indicate, the occurrence of regular Michelsberg types,  
 collocated in distinct huts or graves on the Upper Meuse and  
 in the Elbe basin, can only indicate a real expansion of the  
 people who made them. But this expansion was not the gradual  
 spread of the agricultural Danubians, but rather the result of the  
 wanderings of isolated groups of semi-nomadic hunters; for all  
 the solidity of their fortifications the Michelsberg folk remained  
 largely savage hunters.

*Summary* Economically the Michelsberg culture rested on agriculture,  
 stock-breeding, and hunting, supplemented by fishing. Though  
 some sort of barter is attested, trade did not play an integral  
 part in the Michelsberg economy.

Socially, the regular planning of the villages and the heavy  
 communal labour expended on their construction and defence  
 disclose a solid political organization.

In the religious domain only the tendence of the dead is  
 revealed to us. Burial was regularly individual, generally  
 inhumation in a contracted attitude.

The arts of the weaver, the carpenter, and the potter were

<sup>1</sup> Déchelette, ii, p. 136.

<sup>2</sup> *Mannus*, xvii, p. 169.

<sup>3</sup> *BSA. Brux.* xxxix. 1924, pp. 150 ff.

<sup>4</sup> Unpublished.

<sup>5</sup> *Germania*, 1926, p. 10.

<sup>6</sup> *OAM.*, p. 34; Stocký, *BAP.*, pl. xxxviii; *PZČ.*, pl. cvii; Schránil, *Böhmen*, p. 80; Menghin, *Böhmen*, p. 27.

<sup>7</sup> *VAT.*, pl. ix, 144.

<sup>8</sup> Richter, *Führer, Leipzig*, pl. II, 8.

well developed. But stone was seldom bored, and metal was not worked locally, though occasionally imported.

The distinctive implements are:

(1) Small pebble axes mounted in horn sleeves, (2) rare bored axes of stone, (3) picks, axes, and hafts of deers' horn, perforated for shafting, (4) horn harpoons.

The main weapon was the (5) bow, supplemented at times by (6) the spheroid mace.

As the normal house we must recognize (7) the gabled structure reminiscent of the *megaron*. The choice of moors for settlements, and the use of (9) fortifications must rank as integral features of the complex. (10) The pot forms are apparently tensile, imitating leather.<sup>1</sup> (11) Handles are freely used. (12) The technique is by no means primitive.

Analysing this culture, we first note the 'epipalaeolithic' elements already remarked by P. Reinecke. In addition to the horn implements and the pot shapes which he compared to Danish Shell-mound types, we note the method of hafting the axes, and the harpoons. And in the Maglemose culture and its descendant at Brabrant we see the same preference for lake-banks and perhaps even anticipations of the wooden substructure. We incline therefore to recognize a substantial 'epipalaeolithic' element in the Michelsberg culture.

Of the distinctively neolithic traits the ceramic technique and a few forms such as the jug (a descendant of the Bohemian variant of the Jordansmühl amphora), the keeled bowl and the bell-shaped jar, the bored stone implements and the rectangular gabled house are Danubian (including under that heading Aichbühl I). The deep craters like Fig. 99b, as well as the polygonal battle-axes, suggest Danordic influence.

There remain several traits, most notably the pebble celts and perhaps also the art of fortification,<sup>2</sup> that do not seem at home in either the Danubian or Nordic complex, but have western analogues. Indeed, in 1923 Reinerth<sup>3</sup> treated the Michelsberg culture simply as a branch of his Western complex that would have been brought up the Rhône gap from South France. In his later work he has virtually abandoned this position; on the strength of the blunt-butted celts, indeed, he assumes a

<sup>1</sup> It illustrates Schuchhardt's 'Beutelstil' most admirably; cf. *PZ.* ii, p. 145; *Alteuropa*, p. 51.

<sup>2</sup> Fortifications similar in plan to Urmitz were being built in England ap-

parently before the advent of the Beaker folk from the Rhine. But of course there were fortifications, undated, at Lengyel.

<sup>3</sup> *Chron.*, p. 18.

western element on the Bodensee,<sup>1</sup> but assigns thereto no pottery or other recognizable neolithic traits. The presence of a western element must then be regarded as questionable. The facts can perhaps be adequately explained on the assumption that an epipalaeolithic folk, accustomed to the use of leather vessels, through contact with the Rhenish Danubians learned to bake clay, to till the soil, and to breed stock.<sup>2</sup>

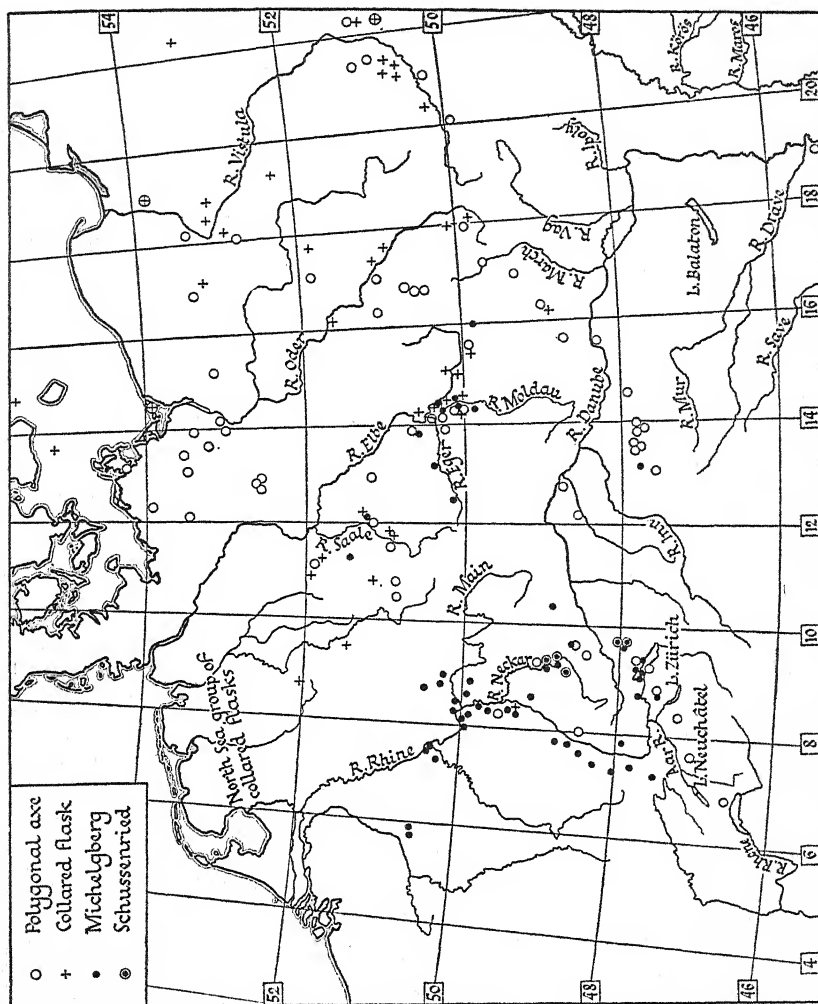
A survey of the cultures of the Alpine zone has shown that they are due, in the main, to descendants of epipalaeolithic stocks who adopted the chief elements of civilization from Danubian invaders in Wurtemberg and the Rhine valley. In Western Switzerland, however, the neolithic civilization would have come from the south-west. We can now better understand the phenomena we observed at Altheim and on the Mondsee.<sup>3</sup> Here, too, we may suspect an epipalaeolithic substratum showing through the Danordic dress.

<sup>1</sup> *Schweiz.*, p. 158; cf. 'Zeittafel', col. 3.

<sup>2</sup> Schumacher, *Rheinlande*, p. 28, was coming to a similar conclusion, but, thinking that the Michelsberg culture was the oldest in the Rhine valley, he was puzzled by the sudden increase of population and emergence of do-

mestic animals, &c. Of course, now that we know that the Danubians had been living side by side with our supposed 'epipalaeolithic survivors' throughout Period II his difficulty disappears.

<sup>3</sup> p. 126 above.



Map IV. DISTRIBUTION OF POLYGONAL BATTLE-AXES, COLLARED FLASKS, AND MICHELBERG CULTURE

## THE BELL BEAKERS

*Distribution* AT the end of the 'neolithic' phase Central Europe was overrun by a curious nomadic population known almost exclusively from isolated graves. This people, of a very unitary physical stock, have been christened the Bell-beaker folk from their characteristic funerary vessels. Their pottery, and probably the people themselves, were not confined to Central Europe, but appeared also in Spain, Brittany, South France, Sardinia, Sicily, and Upper Italy. In our area bell beakers are met principally in the valleys. They occur at some seventy sites in Moravia and at fifty sites in Bohemia. Then there are some thirty-one groups from Thuringia,<sup>1</sup> some thirty sites on the Rhine and its tributaries above Cologne, and eleven in the Upper Danube basin in Bavaria. Outliers are found at three sites in Silesia, one in Lower Austria,<sup>2</sup> at two adjacent sites on the Middle Danube just below Buda-Pest, and near Szentes on the Tisza.<sup>3</sup>

*Pottery* The pottery throughout this wide area is extraordinarily uniform; such diversities as occur are quite secondary and seem for the most part due to chronological rather than local factors. The standard ware in which the best beakers are manufactured is a fine fabric covered with a brilliant red slip and nicely burnished. It thus marks a complete break with all Danubian traditions.

*Technique* The most characteristic form manufactured in this fabric is the bell-shaped beaker. The vessel varies greatly in size, but in the majority of good and early specimens the ratio of height to the maximum diameter lies close about unity. The curves of the profile are always graceful and flowing in the oldest examples. Often a dimple in the base ensures stability.

*Decoration* For the decoration of standard beakers a special implement—a fine-toothed comb-like stamp or a little cogwheel—was impressed on or rolled over the wet clay.<sup>4</sup> It thus left a short line of dots so closely set that they merge into one another. This is the typical beaker ornament, and the purest beakers exhibit zones, hatched with such milled lines, alternating with

<sup>1</sup> *JST.* viii, pp. 1 ff.; xiv, pp. 36 ff.

<sup>2</sup> *MAGW.* lvii (1927), p. 51.

<sup>3</sup> See maps in *Real.* iv, pl. 145 and del Castillo, *Cultura.*

<sup>4</sup> All the beakers studied by Niklasen, *JST.* xiv, p. 37, show comb-stamp impressions; cf. Abercromby, i, p. 10.



plain zones. Still, even in the purest beakers the comb-hatched zone is often combined with one of simply incised or stamped impressions. A zone of chevrons was quite popular even on early beakers.<sup>1</sup> In Moravia, Thuringia, Bohemia, and Bavaria<sup>2</sup> a belt of impressed or excised triangles is sometimes used instead (Fig. 10). And on a fine beaker from the vicinity of Buda-Pest<sup>3</sup> series of stamped circles alternate with the hatched zones. The last example marks already a distinct step away from the 'standard' form deduced from the pan-European types mentioned below and their Esparto-grass ancestors as represented in modern parallels. A zone of lozenges on Bohemian beakers<sup>4</sup> or a bar-chevron band<sup>5</sup> or a series of triangles, even though executed in milled line technique, are equally deviations from the severe norm, although quite possible basketry patterns, and not unknown south of the Alps.

Then a stage of further specialization begins, even on technically fine and shapely beakers, and in Moravia and Bohemia. The zones themselves become the vehicles for independent designs, and consequently are divided vertically into panels or metopes (Fig. 104). Blank panels alternate with others filled with incised chevrons,<sup>5</sup> or hatched squares,<sup>6</sup> or groups of lozenges,<sup>7</sup> or saltires.<sup>8</sup> The system of panelling, utterly foreign to the Mediterranean groups, dominates the decoration of Thuringian beakers and their descendants on the Main and in Holland. These more specialized types often exhibit other signs of senescence—the technique is inferior, the outlines more angular, the decoration less fine. On the Rhine the standard form is relatively rare; though several beakers exhibit excellent workmanship<sup>9</sup> even these are rather taller and at the base more angular than the best specimens farther east; the rest must simply be classed as zoned beakers. Yet the degeneration must have set in here before the tendency to metopic arrangement had become engrained, since on the Middle Rhine panelling is by no means so common as in Thuringia or Holland.

Various types of vase are associated with the bell beaker. The bell-shaped mug (Fig. 105b-c) is just a beaker with a

*Incised  
patterns*

*Associated  
vases:  
Mugs*

<sup>1</sup> e.g. Stocký, *BAP.*, pl. XLII, 5, XLIII, 2, 4, 5.

<sup>2</sup> Medlanky, M. Brno; Turovice, M. Olomouc; Kolin, Stocký, *PZČ.*, pl. cxv, 6; *Real.* iv, pl. 151; *MAGW.* liv, p. 100, fig. 1.

<sup>3</sup> Wosinski, *Ink. Keram.* lxxvii. 3.

<sup>4</sup> *BAP.* xl. 6; Gottwald, p. 37, 5.

<sup>5</sup> *BAP.* xliii. 3.

<sup>6</sup> *Pravěk.* 1909, pl. vi, 2; 1927, pl. II, 12; Gottwald, p. 37, 4 (all Moravian); *ŮST.* xiv, pl. xii, 1; Abercromby, i, pl. II, 28\*, 29\*, and pl. IV.

<sup>7</sup> *BAP.* xl. 2.

<sup>8</sup> *Pravěk.* 1909, pl. vi, 2; 1927, pl. II, 12.

<sup>9</sup> Abercromby, i, pl. II, 32\*; del Castillo, *Cultura*, pls. CLXXXII, 1-2, CLXXXIV, 2; CLXXXVI, 3.

handle. The majority of mugs are plain though often of excellent technique. The form is exceedingly common in Moravia and Bohemia and not rare in Hungary, Silesia,<sup>1</sup> Saxo-Thuringia,<sup>2</sup> and Bavaria.<sup>3</sup> With the exception of the mug from Forchheim<sup>4</sup> on the Peignitz, far away in Franconia, and presumably connected with the Bohemian series, the type is foreign to the Rhine basin,<sup>5</sup> and it is unknown west of the Alps. Nevertheless, mugs occur already in association with quite good beakers<sup>6</sup> in Moravia and Bohemia.

*Dishes* More widespread are deep open dishes, either in the form of a truncated cone or the flattened segment of a sphere. The broad rim is often decorated in milled line technique, and little ledge-like handles, vertically pierced, sit just under it. These vessels, too, are exceptional on the Rhine, but have parallels in the Iberian Peninsula and in the Mediterranean area.<sup>7</sup> A favourite variant in Bohemia, Moravia, and Silesia stands on four (or even five)<sup>8</sup> feet—a pattern also known in Sardinia.<sup>9</sup> The Moravian settlements have further yielded large jars.

*Copper daggers* Bell beakers are accompanied by a no less distinctive set of weapons and ornaments. Axes were not buried with the dead. Stabbing weapons are represented by very small copper daggers with a broad tang and no rivets. The tang is generally flanged, and the bone or wooden hilt had a semicircular indent where it met the blade<sup>10</sup> as in early Egyptian daggers (Fig. 106). This type is represented at three sites in Moravia, and two in Bohemia, at Holmstedt, Eisleben, and Buttelstedt in Thuringia,<sup>10</sup> and at Munich in Bavaria.<sup>11</sup> Graves at Břesovice near Prosnitz in Moravia and Čouš in Bohemia yielded round-heeled triangular daggers with rivet-holes for the attachment of the hilt.<sup>12</sup> In each type the hilt—presumably of wood—has

*Awls* left a semicircular indent where it met the blade.<sup>13</sup> Quadrangular copper awls—perhaps tattooing needles—are comparatively common in Moravia and Bohemia.

<sup>1</sup> e.g. Woischwitz, *Dawn*, fig. 85.

<sup>2</sup> *JST.* xiv, pl. XII, 3, 5.

<sup>3</sup> e.g. Munich, Reinerth, *Chron.*, pl. XIV, 8.

<sup>4</sup> Hock, 'Steinzeitliche Funde von Forchheim', *Erlanger Heimatbuch*, 1925.

<sup>5</sup> A cup of dark-faced ware ornament with cogwheel zones from Worms (M. Worms) is clearly akin to the group.

<sup>6</sup> e.g. in Grave I at Nemčice on the Hana, *Pravěk*, 1926, p. 6, pl. II, 1-3,

or Woischwitz in Silesia.

<sup>7</sup> Åberg, *Iberic*, pp. 61 and 124.

<sup>8</sup> Stocký, *BAP.* xli. 4 and 6.

<sup>9</sup> *Dawn*, fig. 105.

<sup>10</sup> *MAGW.* lvii (1927), p. (88).

<sup>11</sup> *Ibid.* liv, p. 102; del Castillo, pl. CXXX.

<sup>12</sup> A similar dagger was found with a hybrid beaker in a tomb at Heidesheim near Mainz on the Rhine (Behrens, fig. 21, p. 81).

<sup>13</sup> *Real.* ii, p. 68; *MAGW.* lvii, p. (88).

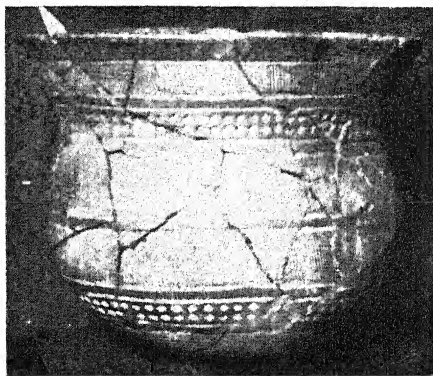


FIG. 103. Bell-beaker, Turovice. M. Olomouc.  $\frac{1}{4}$

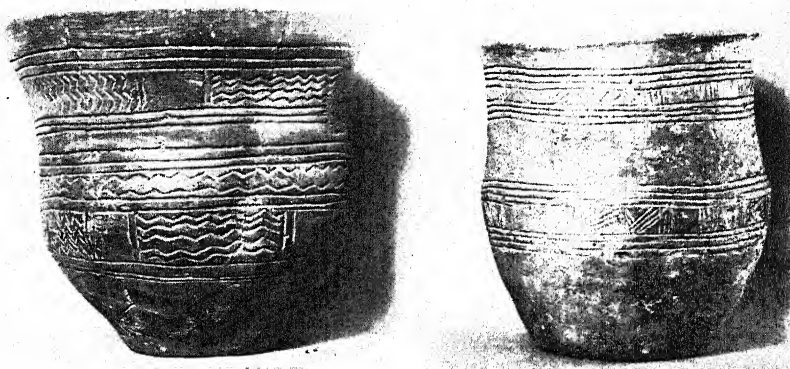


FIG. 104. Zoned beakers, Bad-Dürkheim and Heidesheim. M. Dürkheim and M. Speier.  $\frac{1}{4}$



FIG. 105. Beakers from Forschheim. M. Forschheim.  $\frac{1}{4}$



The flint-work indicates a complete revolution, for the blades are shaped by fine pressure-flaking. The weapon from Forchheim may be an imitation of the copper daggers. More common are arrow-heads with concave bases. The bow was evidently the main weapon of the Bell-beaker folk. With its use are to be connected plaques of stone, concave on one side and perforated at the corners. They were certainly worn on the wrist<sup>1</sup> and may have served as a protection against the recoil of the bow-string. A strip of gold leaf of the same general shape as the stone plaques and similarly perforated, from Bilany (Bohemia),<sup>2</sup> probably served the same purpose. These 'wrist-guards' are universally associated with bell beakers throughout our area.<sup>3</sup>

Flint-work

Bow

Bracers

Gold

Moravian and Bohemian graves have yielded a wealth of ornaments. Most typical are buttons with V perforations, ring

Ornaments.

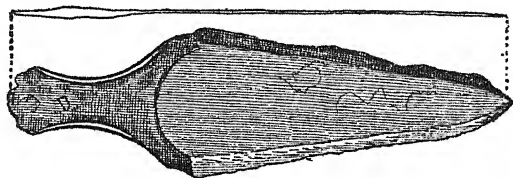


FIG. 106 Ciempozuelos dagger, Bohemia, after Schráníl.  $\frac{1}{2}$

pendants<sup>4</sup> of bone, small rings or ear-rings of gold<sup>5</sup> or copper wire, the latter already recoiled<sup>6</sup> as in Plate 14, D 4. A curious anchor-shaped ornament of bone was found in one Bavarian grave, and a spindle-shaped pendant of horn was found with a very fine beaker at Flamborn near Worms.

Amber already occurs in Bohemia with bell beakers, and gold is found there and in Moravia and Bavaria too.

Amber

The regular burial rite in Bell-beaker graves was interment in the contracted attitude, the corpse lying on the left or right side. No regular orientation was observed, and the tomb was generally a simple pit, though one Moravian grave was lined with stone slabs forming a cist.<sup>7</sup> The great majority of sepulchres are quite isolated or form at best small clusters of three

Graves

<sup>1</sup> *Pravěk*, 1926; Schráníl, *Böhmen*, p. 85.

<sup>2</sup> Stocký, *BAP.*, pl. XLVI, 13; *Dawn*, fig. 86, 5. Bits of gold leaf were found among the graves at Grossmehring, Bavaria, *MAGW.* liv, p. 101.

<sup>3</sup> There is a fine specimen from Tö-

köl in the Hungarian National Museum, No. 143 52.

<sup>4</sup> Jičín (Bohemia), *BAP.* xlv. 11.

<sup>5</sup> Turovice in Moravia, *Real.* ii, p. 69.

<sup>6</sup> Gottwald, *PSPP.*, p. 37 (Držovice, Moravia).

<sup>7</sup> *Real.* ii, p. 67.

or four. Only in Moravia, and to a lesser extent in Bohemia, do we encounter extensive cemeteries of twenty or thirty graves<sup>1</sup> obviously belonging to a regular settlement.

*Interment under barrows* Besides these flat graves, two other rites were observed. In Eastern Moravia<sup>2</sup> the remains were sometimes interred (often after cremation) under a barrow. Cremation is well attested in several other Moravian graves.<sup>3</sup> The pottery in these generally has a late look. Parallels to both phenomena are to be found in the mixed culture of the Lower Rhine described below.

*Cranio-logy* The people interred in the normal graves represent a unitary physical type: they are all markedly brachycephalic, with a skull which Schliz terms purse-shaped. The eyebrow ridges are comparatively prominent. It is important to note that instances of trepanation occur.<sup>4</sup>

The beakers and allied vases were essentially funerary pottery. Perhaps they replaced in the tomb the real Esparto-grass vessels that they most certainly imitate.

*Settlements exceptional* Only in Moravia is anything like a settlement of Beaker folk known, but stray sherds occur in certain Bavarian villages<sup>5</sup>—notably at Karlstein and Altheim—always in circular hut-foundations, partly excavated in the soil to a depth of as much as one metre.

*Hoards* Besides the grave-finds we may probably connect with the Bell-beaker folk the earliest 'hoards' which we meet in Central Europe. They seem to represent the stock-in-trade of wandering merchants. To our group belongs almost certainly a hoard found at Svodobne Dvory near Hradec Kralove (Königgrätz)<sup>6</sup>; for it included thirteen gold spirals like those found in Bell-beaker graves, together with amber beads and copper trinkets. It marks the beginning of the amber trade with the north, where similar gold spirals occur in Danish passage-graves.

*Hoards of celts* To the same people Schumacher would assign some of the hoards of stone celts found in Western Germany. The leading type represented in these hoards is the flat celt with pointed butt, often of greenstone. In one case a copper flat celt was associated with such stone implements. Stone celts of the same form and material are extremely common in Brittany, and the distribution of hoards containing them may very likely

<sup>1</sup> Slavkov, Nemčice. Near Munich there were at least seven.

<sup>2</sup> Červinka, *MS.*, pp. 202-9.

<sup>3</sup> Palliardi, *WPZ.* vi, pp. 41 f.; Červinka, *Pravěk*, 1926; Schráníl, *Böhmen*,

p. 82.

<sup>4</sup> Schráníl, p. 85 f.; Červinka, *MS.*,

p. 215.

<sup>5</sup> *MAGW. l.c.*, p. 104.

<sup>6</sup> Schráníl, *Studie*, p. 23.

West-  
East  
trade

mark an early east and west trade route. Perhaps it was along the same trade route that the famous symbolic double-axes of copper with a hole too small to take a real shaft were diffused (Fig. 107). They are thought to mark the spread of an Aegean type<sup>1</sup> from the Atlantic coasts across France to the Saale valley.

Affinities

As already noted, the Central European bell beakers are only a branch of a ceramic family dispersed all over the Western Mediterranean and along the Atlantic coasts. Technically and stylistically the best and earliest of our beakers correspond closely to typical specimens from Brittany, Central Spain, or Sardinia; particularly close resemblances in ornament exist between the North Italian and Bohemian groups.<sup>2</sup> The associated vases have also parallels beyond the Alps. Here again the Bohemian-Moravian group, with its polypod bowls, is most directly connected with the West Mediterranean group.

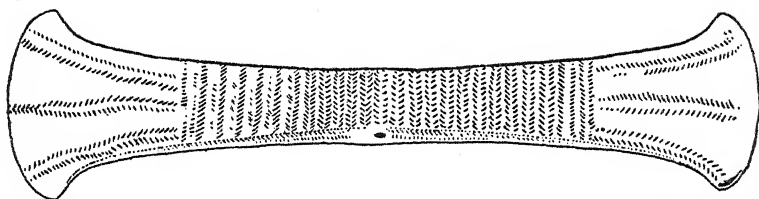


FIG. 107. Symbolic double-axe of copper, Rhein, after Behrens.  $\frac{1}{5}$

The other grave-goods likewise accord well with those found beyond the Alps. The copper daggers are exactly paralleled in the Bell-beaker graves of Ciempozuelos near Madrid, and belong to a family represented in a similar context in Sardinia, Upper Italy, and South Spain, as well as Brittany and South France. The arrow-heads are inferior to the best western products, but recur unaltered in Upper Italy. Wrist-guards are not certainly found with bell beakers in Spain,<sup>3</sup> but appear sporadically in South France, Brittany, and Sardinia. Even the gold leaf from Bohemia can be paralleled at Mané Lud in Brittany, at La Halliade in the Hautes-Pyrénées,<sup>4</sup> and near Arles.<sup>5</sup> Buttons with V-perforation are common in Spain and Sardinia.

It looks, too, as if the same brachycephalic stock was responsible for the Bell-beaker culture on both sides of the Alps.

<sup>1</sup> Cf. p. 177; and *ZfE.* xxxvii, p. 525.

<sup>2</sup> Note particularly the bands of lozenges on the beakers of Kralupy (Stocký, *BAP.* xl. 6; Abercromby, pl. iv; Åberg, *Iberic*, fig. 233).

<sup>3</sup> But cf. del Castillo, pls. v, 1-2; lv, 7-8.

<sup>4</sup> *Mat.* 1881, pp. 522 f.

<sup>5</sup> Cazalis de Fondouce, *Allées couvertes de Provence.*



The people buried at Ciempozuelos were markedly round-headed, and the same type appears, with others, in Catalonia, Sardinia, and Upper Italy. The natural conclusion is that the bell beakers were diffused by a specific people.

*Origin* In Central Europe the bell beakers with their red ware, their milled ornament, and the associated fine flint-flaking, copper daggers, and wrist-guards, are all innovations presumably introduced by intruders. The beaker itself plainly imitates a grass-basket, the material for which must be sought in Spain and North Africa.<sup>1</sup> It is generally agreed to-day that Spain was the immediate centre of diffusion for the culture in Europe, though certain kindred vases from predynastic Egypt<sup>2</sup> and Mesopotamia<sup>3</sup> suggest that Spain was just an outpost of a great North African province. But the thesis that the diffusers of the beaker came from Spain raises difficulties on the anthropological side which both Bosch-Gimpera and Leeds have noticed;<sup>4</sup> for the population of Spain is supposed to have been essentially Mediterranean and dolichocephalic,<sup>5</sup> so that the Ciempozuelos skulls look like the remains of intruders. But in Central Europe the culture and its authors seem equally alien. Still it is true that Trauwitz-Hellweg<sup>6</sup> cannot distinguish the Bavarian Bell-beaker skulls from ordinary neolithic Alpines. Moreover, already by the end of Danubian I, something very like a bell beaker in form and ornament (but not in technique) was being manufactured in Bohemia;<sup>7</sup> the Danubian II b ware of Moravia is red; and copper daggers and buttons with a sort of V-boring occur in Danubian II cemeteries in Hungary. These phenomena, however, remain isolated, and do not coalesce to form a genuine complex from which the individual Bell-beaker culture might have evolved. Nor are its wider presuppositions available here.

If we turn east we soon lose its tracks. The decoration executed by means of a comb on a very coarse ware current in Finland and in North and Central Russia is often reminiscent of that of the bell beaker, and the ovoid pots on which it occurs might theoretically have evolved into bell beakers. There is

<sup>1</sup> Vide the fine example illustrated by Schuchhardt in *PZ.* i (1909), p. 42, fig. 1. Cf. Abercromby, p. 11.

<sup>2</sup> From Badari, Childe, *Most Ancient East*, fig. 15.

<sup>3</sup> *ibid.*, pl. xv, b.

<sup>4</sup> Bosch-Gimpera rejects altogether the idea of a single 'Bell-beaker' folk

as responsible for the Central European and Western cultures. *Real.* iv, p. 358. Cf. *Arch.* lxx, pp. 225 f.

<sup>5</sup> The skulls found with bell beakers near Arles are also dolichocephalic.

<sup>6</sup> *MAGW.* liii, p. 263.

<sup>7</sup> Above, fig. 24c.

nothing to show, however, that they ever did; the culture to which they belong was extremely backward, and in all probability the ceramic style in question is later than our beakers.<sup>1</sup>

Professor Tallgren<sup>2</sup> has called attention to the resemblance between basket-shaped vases found in 'neolithic' kurgans near Kiev<sup>3</sup> and the western beaker. It should be remembered that Sir Arthur Keith would like to derive the English beaker folk from a group represented<sup>4</sup> by undated skulls found in the same region. Tallgren, however, regards the Ukrainian vases as at best influenced by the Central European: other significant links are wanting, and it is a sheer appeal to the unknown to attempt to derive the beaker culture from the east. The similarities may indeed indicate nothing more than a dependence on basketry.

The south-east is admittedly hopeless.<sup>5</sup> Only the west is left.

Assuming, then, that the Bell-beaker folk reached Central Europe from the west, by what route did they travel? Three theories are in the field. Schumacher<sup>6</sup> holds that the invaders came across Central France through the Eifel to the Rhineland and thence spread to the south-east. Hock and Bosch-Gimpera have adopted the same view. The absence of intermediate finds in Central France is admitted, but Schumacher cites the greenstone celts, supposed to belong to the Bell-beaker period on the Rhineland, as evidence of western connexions. Their Breton parallels must indeed be recognized, but they are probably later than the first beakers, and belong to the phase represented by the Early Bronze Age graves of Savoy which are in fact furnished with greenstone celts of the form in question.

Åberg proposed as an alternative route to the Rhine the Belfort gap. In this direction there was at least one possible link at Cranves near Geneva.<sup>7</sup> But Bosch-Gimpera has insisted rightly on the differences between the South French and Rhenish cultures. The latter was, moreover, centred on the Middle Rhine; in Baden and Alsace beakers are very rare (see Map V).

Both these theories assume a priority of the earlier Rhenish beakers over the corresponding Central European. That assumption does not, however, seem to be correct. Though a couple of beakers from the Middle Rhine stand close to Spanish

*Route of  
Beaker  
folk  
From  
Central  
France*

*Rhône  
route*

<sup>1</sup> Åberg, *Iberic*, p. 204.

<sup>2</sup> *La Pontide préscythique*, p. 119.

<sup>3</sup> *Dawn*, fig. 66 b.

<sup>4</sup> *JRAI*. xlv (1915), p. 19.

<sup>5</sup> But the red ware and some of its patterns have quite a Cypriote look.

<sup>6</sup> *Rheinland*, i, p. 49, &c.

<sup>7</sup> Åberg, *Iberic*, fig. 303 A.

and still more to Breton varieties, more numerous parallels could be unearthed in the museums of Bohemia and Moravia. The latter come nearest to the Esparto-grass ancestor. And it is in these lands that the whole culture is most fully and characteristically developed; they have yielded other good 'Spanish' forms, such as broad-rimmed bowls, missing on the Rhine.

*Brenner  
route*

A third route, also suggested by Åberg and now supported by Trauwitz-Hellweg,<sup>1</sup> brings the Beaker folk across the Brenner from Upper Italy. Actually this theory has much to commend it. Some Sardinian and Italian beakers<sup>2</sup> are ornamented with zones of lozenges as in the beaker from Kralupy. The polypod bowls, so common in Central Europe, likewise point to the Italian-Sardinian area. Mugs, too, are found in Sardinia. Direct intercourse across the Brenner must, in fact, be admitted, especially as, besides the West European tanged dagger, the Italian round-heeled type (A1) appears in some Beaker graves. Still the late type of most Bavarian beakers is a valid objection to bringing the Beaker folk from Italy across the Brenner, since their route to Bohemia must lie through Bavaria. The present writer, despite this objection and the weight of authority on the other side, prefers the Brenner route. Taken as a whole, the Central European beakers with their variety of associated types, most of which can be paralleled beyond the Alps, are earlier and nearer the origin than the Rhenish or Thuringian groups that are poor in secondary forms.<sup>3</sup>

*No mass  
migration*

It is, however, wrong to make the alternatives too exclusive. The diffusion of bell beakers is due neither to a mass migration nor to mere cultural borrowing. It results from the movements of small groups of people quite evidently guided by a taste for gold, amber, copper, and kindred substances. Their acquisitiveness was partly satisfied by 'trade'. If some of them settled down in Moravia or the Rhineland, that does not mean a total fixation. On the contrary, they would have moved to and fro along the routes they had discovered and along others they were exploring. We must compare their activities to those of Arab traders in Africa rather than to the migrations of the Bantu.

In Bavaria, Bohemia, and Silesia the Bell-beaker folk, or

<sup>1</sup> *MAGW.* liv, p. 106.

<sup>2</sup> Åberg, *op. cit.*, fig. 233; but similar patterns are not unknown in South

Spain (*ibid.*, fig. 154), and there is one Breton example.

<sup>3</sup> See supplementary note on p. 201.

their culture, was eventually absorbed by the pre-existing populations—Danubian II, Nordic, and 'Thuringian'. On the Rhine they succeeded better in retaining their identity, themselves 'absorbing' the Corded Ware folk. The process is marked by the formation of mixed styles in the pottery which soon take us into the Bronze Age.

### ZONED BEAKER GROUP

There is an extensive class of beakers that are easily confused with bell beakers but are distinguished therefrom by their tallness, angularity, and coarseness. They may be comprised under the general heading of zoned beakers. The height nearly always exceeds the greatest diameter, and the smoothness of the curve in the bell beaker has been lost. The ornament is still arranged in zones, and most of the motives illustrated on bell beakers persist. But besides the usual milled lines, simple incisions, raised ridges (Fig. 108b), and cord-impressions are found. Among the incised patterns the horizontal bands of herring-boning are interesting. The cord impressions are also arranged horizontally, but, in contradistinction to the corded beaker, cover the body as well as the neck which is never cylindrical. In both cases the influence of Corded Ware is clear. *Pottery*  
  
*Influence  
of Corded  
Ware*

Zoned beakers are found as far east as Bohemia,<sup>1</sup> but the majority come from the Rhine valley.

The influence of the Corded Ware group is further attested by the burial rites associated with zoned beakers there.

On both banks of the Rhine degenerate beakers are sometimes found in graves under barrows.<sup>2</sup> Schumacher<sup>3</sup> assigns to the same group a number of fortified settlements to the west of the Rhine, but the evidence is inconclusive. Still, beaker graves have been found in the immediate vicinity of several hill stations or shore villages as at Oberolm, Monsheim, Heidersheim, and Frankenthal—sites well adapted to command the fords or passes. And within the great fortified neolithic refuge near Urmitz several characteristic zoned beakers were discovered.<sup>4</sup> It is therefore certain that if the Zoned-beaker folk did not themselves build fortifications, they made use of those erected by the Michelsberg people. *Barrows*  
  
*Fortified  
camps*

<sup>1</sup> Stocký, *BAP*. xli. 1.

<sup>2</sup> Schumacher, *op. cit.*, p. 49; on west bank at Schifferstadt in the Palatinate according to information kindly supplied by Dr. Sprater.

<sup>3</sup> p. 50. Several sites in Southern Alsace are included, though no Beaker graves are found in that area.

<sup>4</sup> *Mannus*, xvii, p. 169.

*Dutch tombs* The same culture, more markedly tinged with Corded Ware influence, is well represented on the Lower Rhine below Cologne,<sup>1</sup> and then in Holland, principally in Gelderland,<sup>2</sup> *Wood circles* with outliers as far north as Groningen.<sup>3</sup> Many barrows in this area cover peculiar wooden structures that apparently served to support the mound of loose earth. The earliest form, according to Rademacher, was a polygon of horizontal logs which Holwerda<sup>4</sup> has reconstructed, probably wrongly,<sup>5</sup> as a wooden 'tholos'. Later this was replaced by a ring of vertical posts. In the barrow at Harendermolen in Groningen both types of construction occur; two concentric rings of uprights were here encircled by a polygon of horizontal logs apparently with gaps at intervals (Fig. 111).<sup>6</sup> The corpse itself normally lay in a trench in the virgin soil at the centre of the mound.

*Dutch beakers* The shallower beakers are often decorated with complicated incised and moulded patterns, among which the saltire is prominent, the taller specimens with horizontal cord-impressions covering the whole surface. With the beakers occur wrist-guards, shale or amber beads with V-perforations, and once a degenerate battle-axe of stone. The flints include, on the one hand, rough daggers and points of Nordic form and material, on the other, 'double points', the broad faces of which have been polished, a peculiarity of the west.<sup>7</sup> With a so-called *klokyrne*, that resembles a very large beaker but may have served as a cinerary urn, a bronze celt and a dagger with mid-rib and large holes for rivets are said to have been found.<sup>8</sup> Traces of red ochre have been observed in several graves,<sup>9</sup> and a horse's skull was found in one.

It is usual to regard the Zoned-beaker culture as a hybrid between those characterized by bell beakers and corded ware respectively: the use of cord impression and the adoption of the barrow-building habit and the battle-axe would all be due to the latter. This mixture may have taken place either on the Rhine or in Holland or independently in both areas. The Netherlands had certainly been occupied by Battle-axe folk

<sup>1</sup> Rademacher in *Mannus, Ergänzungsband* iv, pp. 119 ff.

<sup>2</sup> Åberg, *Niederland*, pp. 44 ff., gives a list of finds with figures. Cf. Abercromby, i, pl. III, 48\*-53\*.

<sup>3</sup> *PZ.* xv, pp. 52 ff.

<sup>4</sup> *PZ.* i, pp. 374 ff.; iv, pp. 368 f.

<sup>5</sup> *PZ.* xv, p. 55.

<sup>6</sup> *Ibid.*, pl. 1 b, and reconstruction,

fig. 3; Van Giffen, 'Bouwstoffen', 1928, pp. 7-25.

<sup>7</sup> *Mannus, Ergänzungsband* iv, pp. 107 ff. and pl. VIII.

<sup>8</sup> *Real.* v, p. 344; Holwerda, *Nederlands*, pp. 24 and 96, and pl. XIII, 19, 25.

<sup>9</sup> *Oudh. Meded.* 1923, p. 26 (Ermelo); Rademacher, *l. c.*



FIG. 108. Beakers from Frankenthal. M. Frankenthal.  $\frac{1}{4}$

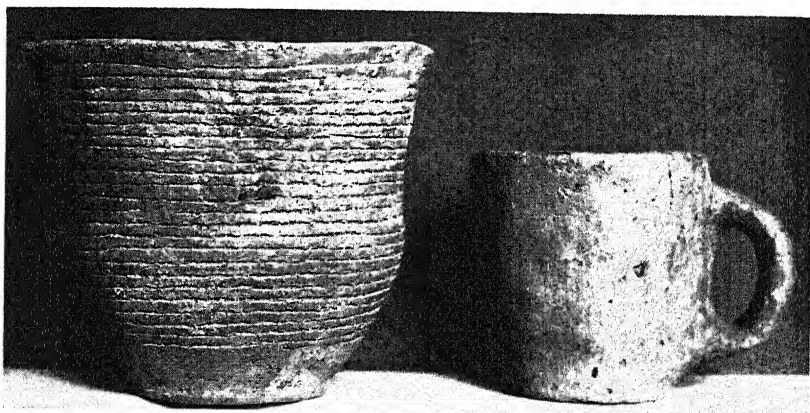


FIG. 109. Beakers from Schifferstadt. M. Speier.  $\frac{1}{4}$



FIG. 110. Pottery from Eiersheimer Mühle. M. Speier.  $\frac{1}{4}$







akin to those of Jutland. The priority of the graves with true corded beakers is proved by barrow E at Uddelermeer, where the grave containing a zoned beaker overlay one furnished with

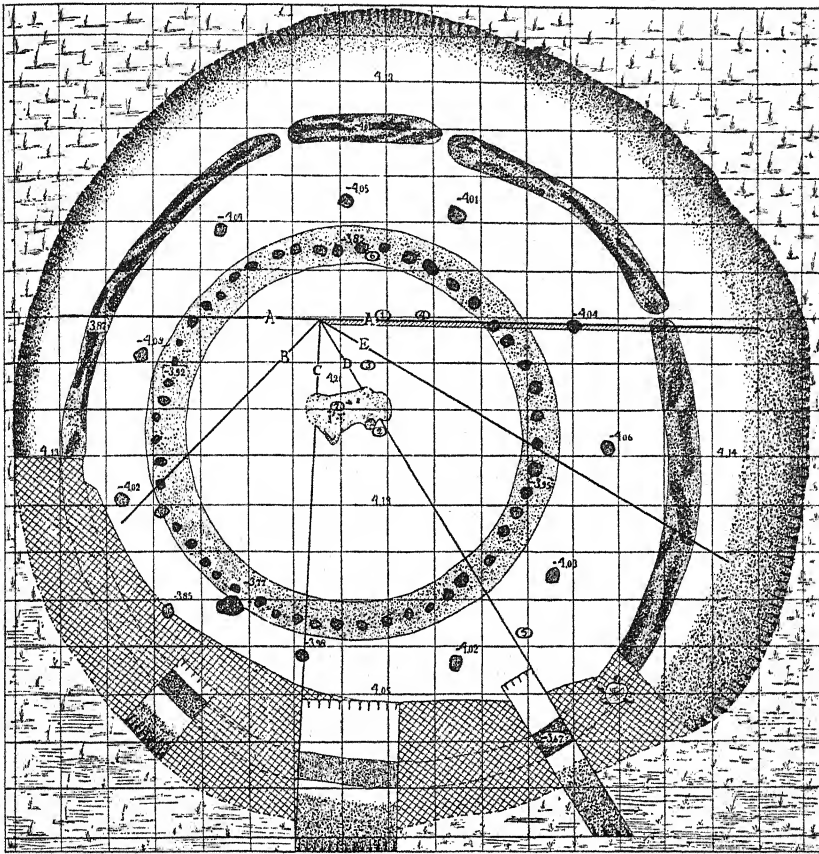


FIG. III. Plan of barrow at Harendermolen, Drenthe, after van Giffen.

a corded beaker and a battle-axe.<sup>1</sup> A similar relation for Hessen is suggested by a barrow near Fulda; a dolichocephalic skeleton, accompanied by a corded beaker and an amphora, was squatting in a pit-grave; on the ground level lay a brachycephalic corpse accompanied by an undecorated bell beaker.<sup>2</sup>

In Holland the Rhenish beaker culture came into contact with that of the Nordic megalithic graves. Zoned beakers were

*Beakers in  
megalithic  
tombs*

<sup>1</sup> Åberg, *Niederland*, figs. 19-20.

<sup>2</sup> *Schriften des Fuldäer Geschichtsvereins*, vi.

found in a passage-grave near Drouwen in the Province of Drenthe. Analogous finds are reported from North-West Germany and even Denmark. A fine beaker, decorated in milled line technique with the patterns arranged in metopes, was unearthed in the upper layers of the great passage-grave at Bigum.<sup>1</sup> Wrist-guards have also been noted in Danish graves.

*Eiersheimer Mühle* A sort of reflex of this contact may be seen at Eiersheimer Mühle in the Palatinate and at Züschen in Hessen. In hut-foundations at the former site cups of the zoned beaker class, like Fig. 109 b, were seemingly associated with collared flasks, and a curious ware (Fig. 110)<sup>2</sup> ornamented with deep strokes in a manner reminiscent, as Sprater remarks, of Danubian I b. Reinerth assigns it to his 'Aichbühl' group.<sup>3</sup> In the long stone cist of Züschen a fragment of a tall beaker occurred side by side with collared flasks.

*Place in Montelius' chronology* These facts prove contact between the evolved Bell-beaker culture and the megalithic culture of the north in the middle or late phase of the Passage-grave epoch and accordingly allow of the fixation of the Beaker episode within the Nordic chronological framework. It belongs to the later half but not the very end of Montelius 3.

*Relations with Great Britain* The peculiar interest of the zoned beakers lies, however, in their paternal relation to the oldest British pottery of the Bronze Age, first demonstrated by Lord Abercromby.<sup>4</sup> His type B beakers agree very closely with the Rhenish series. Some are so fine that they might be classed as bell beakers. And the beads with V-perforation, wrist-guards, and flat-tanged daggers associated with them (exclusively in the case of the daggers<sup>5</sup>) must belong to that group. Only the beakers decorated with cord-impressions<sup>6</sup> and the barrows over the graves disclose the presence in this group of that Corded Ware element detected in the Zoned-beaker group on the Middle Rhine.<sup>7</sup> In beakers of type A with their longer, more cylindrical necks, the Corded Ware element is more pronounced, as Abercromby pointed out in 1902. The association of battle-axes with the type A to the exclusion of type B confirms his conclusion. At the same time the prominence of the saltire in their decoration connects them with Central Germany where that motive is so

<sup>1</sup> *Nord. Fort.* ii, p. 117.

<sup>2</sup> *Mitt. Hist. Vereins der Pfalz* (Speyer),

31 (1911), pp. 34-5.

<sup>3</sup> *Chron.*, p. 28.

<sup>4</sup> *JRAI.* xxxii, pp. 373 ff.

<sup>5</sup> Abercromby, i, p. 54.

<sup>6</sup> Abercromby, i, 25, 26, 196, 201, &c.

<sup>7</sup> Even so it must be remembered that cord impression was not unknown in Brittany nor even in South France.

common. Judging by the round-heeled daggers that go with them, type A is later than type B. Finally, the shallower Batavian beakers stand very close to British specimens, especially to type C, but are scarcely in the direct line of descent.

It is, therefore, still most probable<sup>1</sup> that the British beakers were introduced by invaders from Central Europe who already included Bell-beaker and Corded Ware elements. But the relations must have been very complex. Beakers of type B are scattered over Great Britain very evenly, and some Scottish specimens<sup>2</sup> agree so closely with the Rhenish ones that they cannot be regarded as late degeneration products. The bringers of type B at least did not spread slowly northwards, but landed at widely separated points. Perhaps they prepared the way for a more extensive colonization that introduced type A or its prototypes. In the second group of colonists it is tempting to assume the incorporation of reinforcements of Battle-axe folk<sup>3</sup> perhaps belonging to the wave that spread from Jutland to Holland.

*Types A and B denote distinct movements*

Relations between Britain and the Continent were, however, not one-sided. Jet, presumably derived from Yorkshire, was found with the beakers near Drouwen and elsewhere. The Dutch bronzes may likewise be British. And the curious wooden structure at Harendermolen is most likely an imitation in wood of stone monuments such as are common in Scotland<sup>4</sup> but are quite foreign to Central Europe. We might then infer that type B was brought to Britain in the course of exploratory journeys similar to those that diffused the Continental bell beakers, rather than by a regular colonization. Some of the Danish beakers were probably left by the same process.

*Reciprocity of the relations*

Whatever were the details of the activity of Beaker folk its consequence is clear: it brought to Britain the cultural tradition of the Western Mediterranean enriched by south-eastern elements transmitted up the Danube, and others derived from the battle-axe cultures of the north and east.

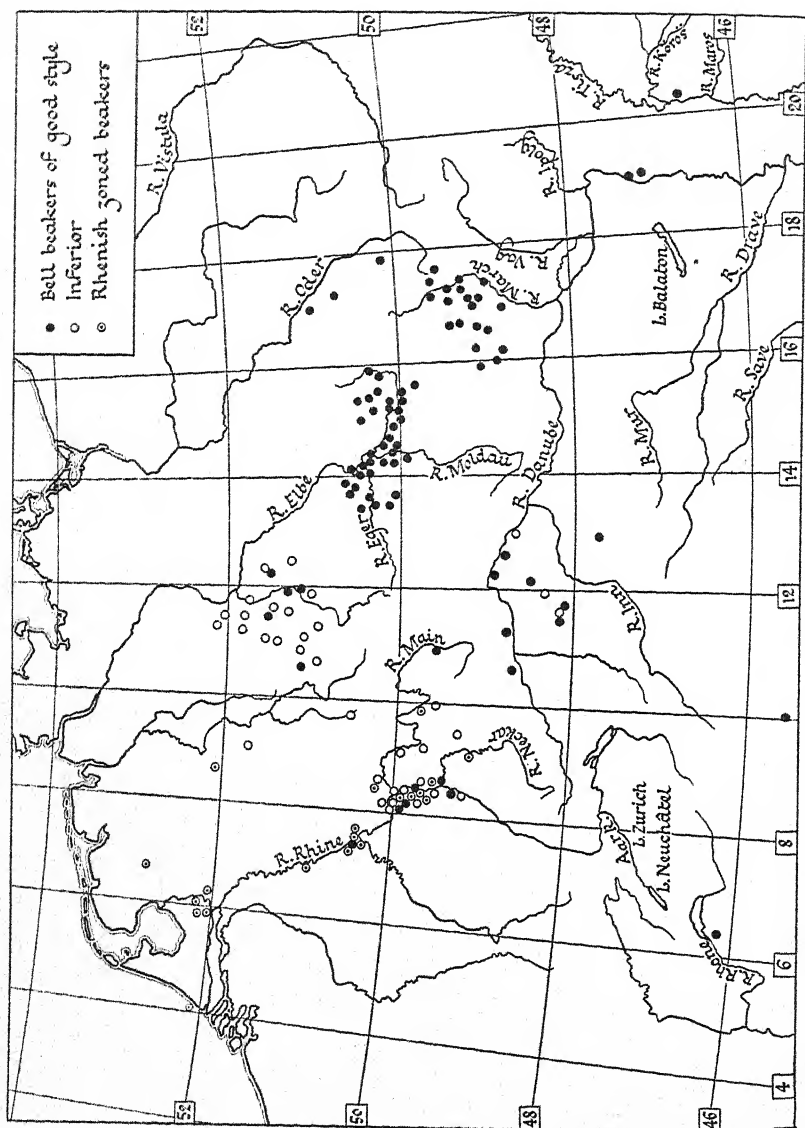
<sup>1</sup> Bremer, *Real.* iv, p. 550, would assign priority to the British culture, and some beakers from South England may still be connected with Brittany.

<sup>2</sup> e.g. Abercromby, 195 and 196.

<sup>3</sup> The long, probably Nordic, skulls found with some beakers would belong to these; cf. Abercromby, i, p. 66.

<sup>4</sup> e.g. at Broomend of Crichtie near Inverurie, Aberdeenshire.

*Supplementary note to p. 196.* A. del Castillo (*Cultura*, p. 179) very plausibly argues for a dual invasion. The Rhenish beakers would be due to a current from South France while the rest would be connected by the Brenner with the Mediterranean-Italian groups. Both currents would have met in Thuringia.



Map V. DISTRIBUTION OF BELL-BEAKERS

# XI

## THE 'COPPER AGE' IN HUNGARY

IN the last four chapters the emphasis has been upon the reaction of autochthonous elements on its borders to the southern stimuli transmitted up the Danube corridor, or upon the crossing of the Danubian current by others from the east or west. Now, we must insist that the permeation of Central Europe by civilizing influences coming up the Danube had not been arrested in Period III.

We have already noticed incidentally south-eastern elements in the 'Nordic' culture. As such may be cited the spools of Trojan type and certain accidental ceramic forms such as the fluted ware. Moreover, *Pectunculus* shells must without question have come from the south-east; the copper objects found in association with Nordic and corded wares most probably came up the Danube too. Indisputable evidence of contact with the intermediate area of the Middle Danube is, however, provided by certain copper axes of specifically Hungarian type met in Lower Austria, Moravia, Bohemia, and even Silesia and Thuringia. (These are attributed to Period III because they are never associated in those areas with objects characteristic of the succeeding epoch.) At the same time counter currents, perhaps even invasions, from the north are discernable in Hungary itself. We must, therefore, now examine in detail the course of events in the Hungarian plain.

Unfortunately the course of events in the Middle Danube plain is far from clear. While certain intrusive cultures can be recognized here, as farther north, there was no abrupt and universal break in the old tradition such as occurred in Moravia, Silesia, or Bohemia. As in the kindred province of Thessaly the third and fourth periods are only distinguished by accidental traits (importations of *Urfirnis* and Minyan ware respectively), so in many parts of Hungary the old Danubian II culture persisted well into Period III. We have already indicated in discussing the cemeteries of Danubian II type that a part at least of the graves should in reality probably be assigned to Period III. That was very likely the case with the great cemetery at Lengyel in Western Hungary.

*Continuation of Danubian II*

More positive evidence is available from the eastern area. Mention has already been made of primitive copper axes from Lucska, Csóka, and Tordos. A more advanced type of copper

*Maros-décse*

axe belonging to the same family has recently been discovered<sup>1</sup> in a cemetery of Danubian II type at Marosdécse in Transylvania. The skeletons, buried in the contracted attitude, showed traces of red colouration. They were regularly provided with flint knives or lances, and decked with necklaces of *Unio* shell disks and copper helices. But one skeleton was armed with an axe-adze of the type just indicated, another with a flat stone mace-head with four projections, while a third wore an 'ingot torque' of Early Bronze Age type.

*Ószenti-ván* Similar indications are afforded by the cemetery of Ószenti-ván recently excavated by Dr. Banner. Here, among graves belonging as a whole to the end of Period III and the beginning of IV, was one interment accompanied by a pedestalled bowl descended from the Danubian II type (Fig. 126, b).<sup>2</sup> It is thus clear that a part of the extensive Danubian II material from Hungary must be assigned in fact to Period III.

*Axe-adzes* Of the innovations noticed in the period the most striking is the copper axe-adze already mentioned. The distinctive feature of the implement is that the two blades are at right angles to one another. The simplest type is smooth on both faces; in later specimens there is a little tubular support round the shaft-hole (Fig. 112). According to Pulszky the shaft-hole was not cast, but punched through the red-hot metal.

*Distribution* The majority of such axe-adzes have been found east of the Tisza in North Hungary and Transylvania.<sup>3</sup> Thence they extend southwards and westwards to Bulgaria,<sup>4</sup> Old Serbia<sup>5</sup> (29 specimens), Slavonia (13 specimens),<sup>6</sup> Bosnia,<sup>5</sup> Albania,<sup>5</sup> and Dalmatia.<sup>5</sup> West of the Tisza they spread across the sandy country of North Hungary to the Mátra mountains and the Danube valley near Buda-Pest. Farther west there are several specimens from Moravia,<sup>7</sup> two from Silesia, nine from Bohemia,<sup>8</sup> two from the State of Saxony,<sup>9</sup> two from Saxo-Thuringia,<sup>10</sup> and one from Lower Austria.<sup>11</sup> East of the Carpathians there are typical specimens from Horodnica in East Galicia

<sup>1</sup> *AE*. xlii (1928), p. 50.

<sup>2</sup> *Dolgozatok*, 1927, p. 96, 10. So, too, at least one grave at Kovacshalom (*AE*. xxxiii, p. 131, fig. 10) seems to have contained an 'Early Bronze Age' mug.

<sup>3</sup> There are 19 specimens in Transylvania, 9 in County Temes, 6 each in Counties Bihar and Szabolcs, 2 in Szatmar, and 24 west of the Tisza; *AE*. xxxiii (1913), pp. 306 f. (these

figures are incomplete).

<sup>4</sup> *Real*. ii, pl. 99.

<sup>5</sup> *WMBH*. xi, p. 52.

<sup>6</sup> *Vjes. HAD*. vi (1902), p. 65.

<sup>7</sup> *Pravěk*, 1903, pp. 4 ff.

<sup>8</sup> Schráníl, *Studie*, p. 25; *Böhmen*, p. 89.

<sup>9</sup> *Real*. vii, p. 186.

<sup>10</sup> *ŽST*. x, pl. x.

<sup>11</sup> *MAGW*. xxxviii (1908), p. (22).



and from the Upper Dniepr;<sup>1</sup> then there is an analogous axe with a pointed, instead of an adze, butt from Veremie, a Tripolye A site near Kiev,<sup>2</sup> and finally specimens from barrows near Maikop on the Kuban<sup>3</sup> and Asterabad in North Persia.<sup>4</sup>

Axe-adzes of this type in several cases cluster round metalliferous regions; that is perfectly obvious in Serbia, and is suggested by the distributions in Transylvania, North Hungary, and Slovakia (see Map VI).<sup>5</sup> This does not mean that the axe-adze was used principally as a tool. Though some variants may have served as miners' picks, others were surely battle-axes (e.g. those from Lucska and Marosdécse).

The origin of the type is not certain. In its simplest form, as the finds from Lucska (Fig. 56, a-b) reveal, the axe-adze

*Relation  
to ores*

*Origin  
Local*

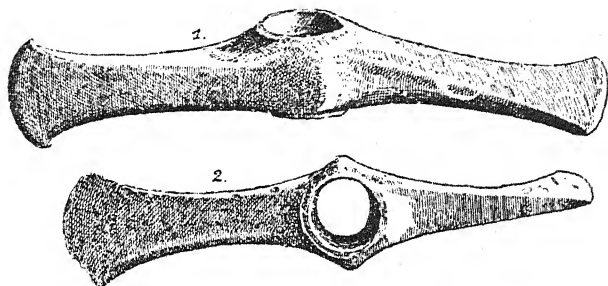


FIG. 112. Axe-adzes, Hajduhadhaz and Pocsaj after Zoltai.  $\frac{1}{2}$

comes very close to the stone axe-hammer that had been used by Danubians from time immemorial. Hence a local Hungarian origin is theoretically possible. However, G. Nagy<sup>6</sup> points out that axe-adzes are not specially common round the Mátra mountains where native copper was available.

An Aegean origin is quite possible since axe-adzes (albeit of rather different form) are traceable in Crete from E.M. II,<sup>7</sup> and recur in the Cyclades<sup>8</sup> and at Troy.<sup>9</sup>

*Aegean*

On the other hand G. Nagy<sup>10</sup> has suggested that axe-adzes

*Or  
Eastern*

<sup>1</sup> Uvarov, *Sb'ornik m'elkich trudov*, ii, pl. xxiii, 62; *MZK*, xiv, p. xcii; Tallgren, *Pontide*, fig. 99, 6.

<sup>2</sup> Tallgren, *Pontide*, fig. 98, 8.

<sup>3</sup> Childe, *Dawn*, fig. 61.

<sup>4</sup> *JEA*, vi, pl. iii.

<sup>5</sup> In the map both true axe-adzes and the allied axe-hammers, like fig. 56b, have been included.

<sup>6</sup> *AE*, xxxiii, p. 295.

<sup>7</sup> Evans, *Palace*, i, p. 193, n. 3.

<sup>8</sup> *B.M. Bronze*, fig. 174.

<sup>9</sup> *PZ*, iv, pp. 22 f.

<sup>10</sup> *AE*, xxxiii, pp. 310 and 390. He contends that the axe-adzes were introduced by the people known to Greek mythology as Centaurs, and would first appear, in the Lucska form, in the fourteenth century. It must be admitted that the copper implements are very like certain iron axes found in 'Scythian' graves.



were introduced from the east by precursors of the Scyths. In fact, in Hungary the type does spread very much along the same lines as Scythian objects at a later date. A satisfying explanation of the peculiar form would be to regard it as the combination of the two types of axe current in Sumer from the middle of the fourth millennium—a combination which has actually been effected in the specimen from Maikop.<sup>1</sup> The connexion between the axe-adze and a type of torque, regarded by Frankfort<sup>2</sup> and Hubert<sup>3</sup> as Caucasian, suggested by discoveries at Marosdécse, would support this view. In that case the copper axe-adzes in Hungary would be a parallel to the stone battle-axes of Central Germany; both would be due to an invasion from the east if the theory advanced on p. 159 be accepted. Among the intrusive cultures to be next examined we actually find very clear evidence of connexions with South Russia.

#### I. INTRUSIVE CULTURES EAST OF THE TISZA

In the battle-axe province east of the Tisza the following intrusive cultural groups appear in Periods III–IV side by side with survivals of Danubian II.

*Ochre graves* Barrows covering contracted skeletons that had either been stained red or were accompanied by lumps of red ochre are found on the Upper Tisza, especially in County Hajdu,<sup>4</sup> and perhaps as far south as Szarvas in Békés.<sup>5</sup> In one such mound an axe-adze, a quadrangular awl, a clay figurine, and a bowl ornamented rather in the style of Bükk B ware were apparently discovered.<sup>6</sup>

Such barrows occur in just the regions where Scythian kurgans were subsequently erected. And the burial rite finds its nearest parallels in the Copper Age ochre-graves of the South Russian steppes. If we regard the barrows in question as monuments of nomad invaders from the east who introduced the copper battle-axe (axe-adze), we should have to assume that the use of large quantities of red ochre noted in some graves of Danubian II type east of the Tisza was due to these invaders. But, of course, the process is reversible. Nevertheless the barrows in question do indubitably attest relations between the Hungarian plain and South Russia across the

<sup>1</sup> Childe, *Aryans*, p. 189.

<sup>2</sup> *Studies*, ii, p. 149.

<sup>3</sup> *Syria*, 1925, p. 25.

<sup>4</sup> *Dolgozatok*, 1927, pp. 86, 89; cf. p. 76, and *AE*. xxxv, p. 208.

<sup>5</sup> *Dolgozatok*, 1927, p. 88, but here the mound seems to have been just a settlement, not a barrow; cf. *AE*. xxxv, p. 13.

<sup>6</sup> Letter from Dr. Zoltai.

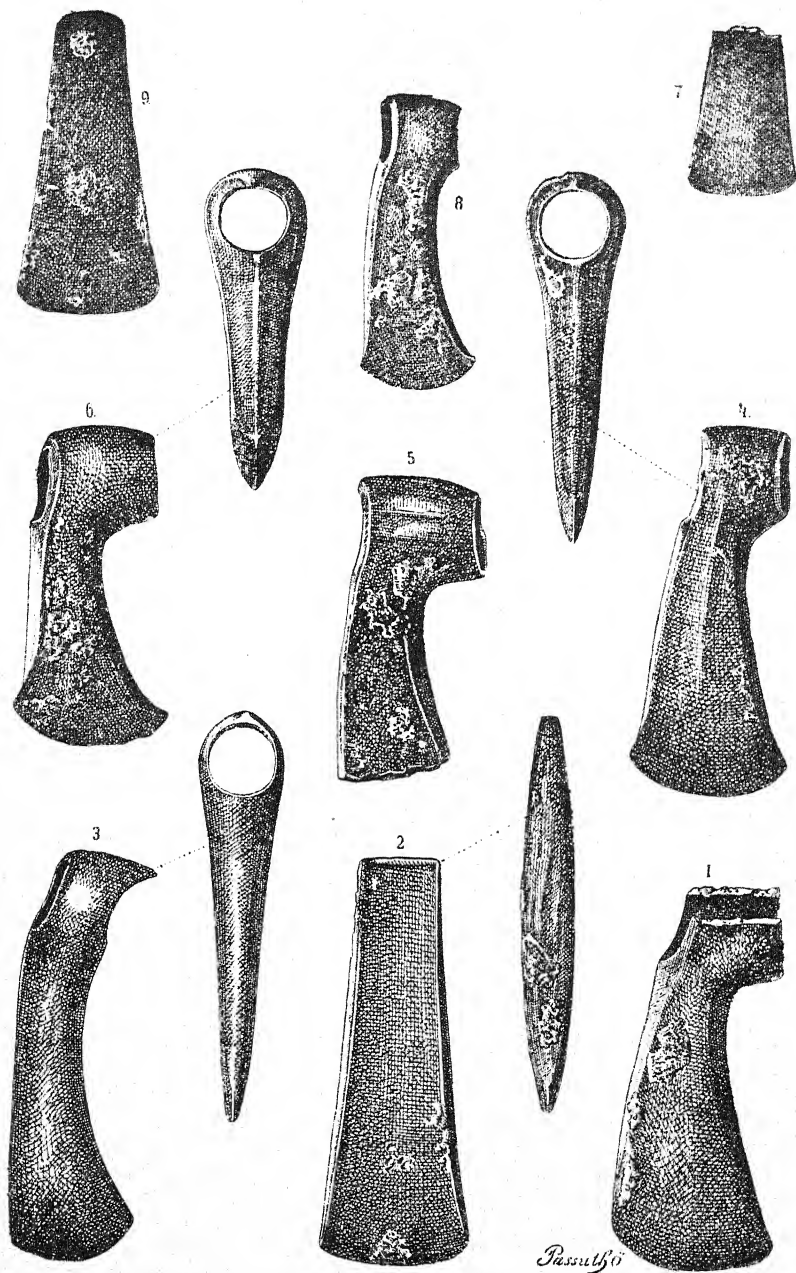


FIG. 113. Hoard of copper axes and flat celts from Tolna County.  $\frac{1}{2}$

Carpathians one way or the other. The Scythian analogues would favour the east to west direction.

*Transylvanian barrows* In Transylvania there are other barrows in the valleys of the Alt and the Maros covering contracted skeletons.<sup>1</sup> These contained stone celts, flint flakes, and pots ornamented with furrowed patterns filled with white paste.<sup>2</sup> One corpse, however, at Vlădhâza was provided with a girdle clasp of copper wire in the form of a spectacle spiral.<sup>3</sup> Two clay models of animals were found in another barrow of the same group. Perhaps these interments are related to the ochre graves along the Tisza.

*Corded ware* Possibly the invasion of Corded Ware is to be connected with the same movement. Two genuine corded beakers were found at Buj in County Szabolcs.<sup>4</sup> Sherds of corded ware were, together with an axe-adze, found in the strata overlying Erösd,<sup>5</sup> and elsewhere in the Alt valley and along the Maros.<sup>6</sup> Faceted battle-axes occur in the same regions. Dr. Roska concludes that corded ware entered Hungary both from the north-west and from the east across the Carpathians. Despite the exiguous traces it has left, this incursion had a profound effect upon the development of culture in the Middle Danube basin, as the discoveries in the Middle Bronze Age urnfields show.

Lastly, we must regard as trans-Carpathian in origin the culture of Danordic affinities from the Alt valley and Western Transylvania described in Chapter VII. All these remains, derived from the axe-adze area, indicate intrusions from the north or east that resulted in the incorporation of Hungary in the great battle-axe province.

## II. WESTERN INCURSIONS

From the north-west two lines of intrusion can be traced. The Beaker folk, as we saw, made their way as far as Szentes.

*Bell-beaker Culture* Numerous graves near Tököl<sup>7</sup> on the Csepely Island and on the left bank of the Danube at Dömsöd<sup>8</sup> attest a substantial settlement of the same folk in the country just south of Budapest. Besides very fine beakers, some with handles and others ornamented with concentric circles, the graves yielded wrist-guards of the classical shape. But at Tököl there are indications of a fusion of the Bell-beaker culture with other elements;

<sup>1</sup> *Dolgozatok*, 1927, pp. 75, 76, 78; *AE*, xxxiv, p. 387.

<sup>2</sup> *Wosinski, Ink. Ker.*, pl. v.

<sup>3</sup> *ZfE*, 1896, p. 80, fig. 46.

<sup>4</sup> *Dolgozatok*, v (1914), p. 418.

<sup>5</sup> *PZ*, xvi, p. 85; *AE*, xlii, p. 49.

<sup>6</sup> *Dolgozatok*, vi, pp. 1 ff.; x, p. 147.

<sup>7</sup> *AE*, 1879, pp. 47 ff.; *Wosinski, Ink. Ker.*, pls. LXXVIII-LXXX.

<sup>8</sup> *Dolgozatok*, v (1914), pp. 437 ff.

the square foot of the bowl, figured by Wosinski on Plate LXXIX, is quite reminiscent of our cross-footed vases and their descendants at Tószeg. Moreover, among the skeletons the usual brachycephalic type was poorly represented: of the ten skulls measured six were long-headed and four mesaticephalic; no round heads were preserved.<sup>1</sup>

Farther west we have obscure and uncertain traces of other incursions, this time apparently of Alpine folk accustomed to living in pile-villages or fortified hill stations.

On the Alpine slopes there are traces of a pile-dwelling culture seemingly derived from farther north. From Neusiedlersee come a few remains that cannot be dated at all.<sup>2</sup> On the former peat bog called Laibach Moor (Ljubljansko Blat) in Carniola there are more extensive remains. The settlement at Notranje gorice<sup>3</sup> certainly goes back to Period III. The village was built on piles<sup>4</sup> far out on the moor and connected to the shore by a sort of bridge.

*Lake-dwellings  
Laibach:  
Notranje  
gorice*

The pottery was the usual coarse Alpine ware. Practically no vessels were reconstructed, but it was clear that the only handles in use were very small and indeed little better than string-hole lugs. Perforations in the vase wall were very common. The normal ornament was provided by the already familiar plastic strips with finger-tip impressions. In addition knobs and incised lines occur.

One complete vase was a shallow corded beaker decorated with the customary horizontal cord-impressions round the neck, at the base of which sat two horizontally pierced string-hole handles.

*Cord ornament*

The celts were flat on the faces, with straight sides. Wedge-shaped hammer-axes were not uncommon. Numerous thin plaques of chert and sandstone, perforated at one end just like whetstones, were discovered.

*Celts  
Hammer-axes*

Arrow-heads with rudimentary tangs, saws, and knives were made of flint. One fragment seems to belong to the half-moon type of sickle so common in the Mondsee.

*Flint  
sickles*

Bored teeth of swine (tame and wild), wolves, and bears, and beads of wood were worn as ornaments. A thick tubular bead of clay divided into segments by incisions was also found, as well as a piece of red colouring matter (*Bolus armeniacus*). Clay whorls were common.

*Ornaments*

<sup>1</sup> *MAGW.* lvii, p. (128).

<sup>2</sup> Munro, *Lake-dwellings*, p. 164.

<sup>3</sup> *JfA.* iv, pp. 92-103.

<sup>4</sup> Of oak, alder, poplar, and rarely, pine.

*Animal bones* The bones of turbary cattle (*sic*), turbary swine, a domesticated variety of local wild pig,<sup>1</sup> goat, and sheep illustrate the stock raised.

*Absence of* No grains were noticed, but querns were found. The fallow and roe deer, urus, wolf, badger, and boar were hunted.

*grain* The approximate date of the settlement, late in Period III, *Date* is given by the flint knives and the corded beakers. An even later date is possible since the whetstones belie the neolithic appearance of the remaining industry. The clay bead with incised rings is interesting for its southern analogues. The best parallel is a stone bead from Early Hittite graves in North Syria,<sup>2</sup> but the well-known bird's-leg beads from Malta<sup>3</sup> might also be mentioned.

For the rest the whole complex may be just an extension of that already discovered in Wurtemberg and Upper Austria, with a corded-ware tinge. At the same time there are doubtless present here elements derived from the early neolithic cave cultures of circum-Mediterranean character, already alluded to.

*Slavonian culture* Later there appears another civilization with Danordic and East Alpine affinities in which many south-eastern elements have also been absorbed. Their reflexion is to be seen most distinctly in the so-called Slavonian culture of the Lower Drave which is generally assigned to the 'Copper Age'. Its remains are found at Sarvaš, Vučedol, and Erdut, all near Osijek, while analogous material has been collected near Pécs<sup>4</sup> in South Hungary and at Hrtkovči on the Save.<sup>5</sup> The excavations on these sites are far from satisfactory, and no really clear picture of this culture can be recreated.

*Hammer-axes* All Slavonian sites<sup>6</sup> have yielded an abundance of horn, bone, flint, and stone implements including polished celts—none, however, of the shoe-last type. Hammer-axes, some with knobbed heads, have also been found. Several sites are said to have been defended by a moat, and graves with contracted skeletons were found in the vicinity.<sup>7</sup>

*Pottery* The culture which concerns us is defined by one distinctive class of pottery, though other wares—some certainly Late Bronze Age—were present at the same sites. Slavonian pottery

<sup>1</sup> Antonius, p. 240.

<sup>2</sup> *LAAA*, vi, pl. XXI, b.

<sup>3</sup> *Archaeologia*, lxvii, pl. XVI, 3, 2.

<sup>4</sup> Material at Belgrade.

<sup>5</sup> Material at Zagreb.

<sup>6</sup> *MPK*, 1901, pp. 4 f.; *MAGW*, xxvii, pp. [78] f.; *Vjes. HAD*, v (1901),

p. 178.

<sup>7</sup> It is not clear whether the graves from Vukovar, described in *Vjes. HAD*, vi, pp. 60 ff., belong here. They contained wire spirals, bracelets, and long strips of (?) copper and beads and bracelets made from *Spondylus* shell.



FIG. 114. Slavonian ware, keeled cup,  
Vučedol. M. Zagreb



FIG. 115. Slavonian ware pedestalled  
cup. M. Zagreb.  $\frac{1}{4}$



FIG. 116. Jar from Vukovar. M. Osijek.  $\frac{2}{3}$

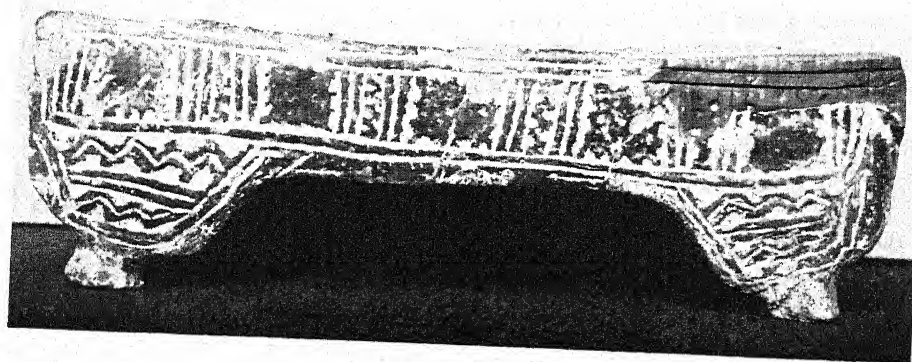


FIG. 117. Model table, Vukovar. M. Osijek.  $\frac{1}{2}$





FIG. 118. Laibach amphora. M. Ljubljana.  $\frac{1}{3}$



FIG. 119. Laibach jug. M. Ljubljana.  $\frac{1}{3}$

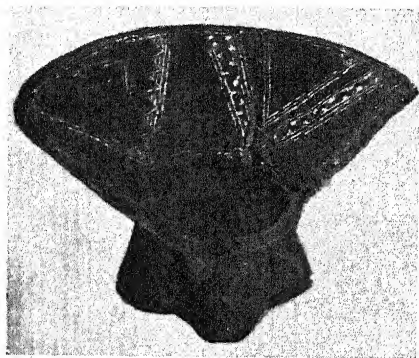


FIG. 120 Cross-footed dish, Laibach. M. Ljubljana.  $\frac{1}{3}$

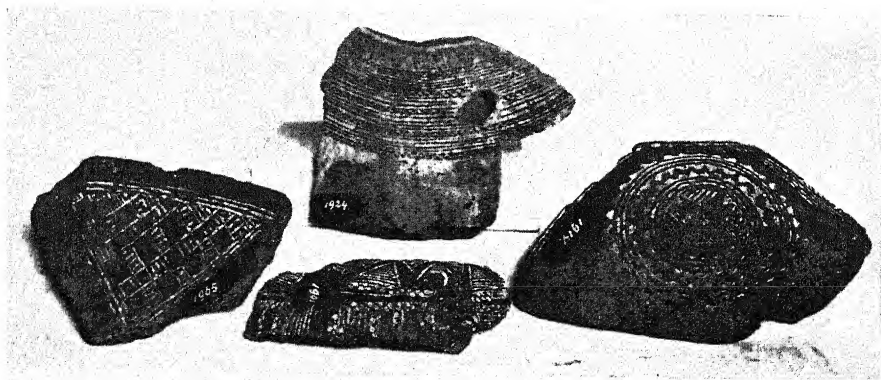


FIG. 121. Tunnel handles. M. Ljubljana

is slipped and polished, orange red or, more rarely, black in colour. Among the most distinctive shapes are bowls with a very broad rim, cups, often very big, with a handle on the keel (Fig. 115), dishes divided into two compartments, goblets with a cruciform foot (like Fig. 120), pedestalled cups (Fig. 114), and ring flasks.<sup>1</sup>

Besides these vessels there are numerous models—tables like Fig. 117, and huts shaped like an oval beehive sectioned vertically near the minor axis. *Model huts*

The decoration is for the most part 'excised' in bold style, that is to say, the designs are formed by cutting or scooping slices out of the clay before firing. Wide strips are often carved out leaving reserved patterns in relief. The hollows are in all cases filled with a white mass. The same effect was sometimes obtained by the use of a triangular stamp. The motives used are fretted triangles, lozenges, circles, stars, and crosses. Seriated outlines are characteristic, and there is a visible tendency to metopic arrangement of the design. *Fretwork ornament*

The technique employed for the decoration of Slavonian ware, and to some extent the forms of the pots themselves,<sup>2</sup> are obviously borrowed from another craft—that of the wood-carver. German terminology well expresses this relation by the designation 'fretwork ornament' (Kerbschnitt) for the excised decoration. The dependence of the Slavonian ornament on products of a non-ceramic industry must of course diminish the value of ceramic parallels in tracing the origin of the culture; the transference of the wood-carver's procedure to clay might well have happened independently in several localities. Yet we may well recall that analogous ornamental processes were employed to produce similar patterns in the Cyclades<sup>3</sup> (where the influence of wood-work was felt early<sup>4</sup>) and in the Copper Age *tells* of Bulgaria; in the latter region some Slavonian shapes also recur.<sup>5</sup> On the other hand, the recognition of the wooden prototypes for the technique at once rules out the perverse attempts of Schliz<sup>6</sup> and Schuchhardt<sup>7</sup> to bring Slavonian ware into the Nordic province by confusing the process employed in its decoration with the Nordic system of 'furrowing'.<sup>8</sup> *Influence of wood-carving*

<sup>1</sup> Wosinski, *Ink. Ker.*, pl. xviii; Hoernes-Menghin, p. 275, 6-7.

<sup>2</sup> Note the legs of the table, fig. 117, and the handle of the mug.

<sup>3</sup> 'Εφ. 'Αρχ., 1899, pl. ix; cf. Frankfort, *Studies*, ii, p. 50, Dorpfeld, *Alt-Ithaka*, B. 66 a, 1, and Hall, *Aegean in*

*Bronze Age*, p. 60.

<sup>4</sup> Forsdyke, *BM. Cat.*, pp. xxix, xxxii.

<sup>5</sup> e.g. *Real.* ii, pl. 95, b.

<sup>6</sup> *PZ.* ii, p. 120.

<sup>7</sup> *Alteuropa*, p. 137.

<sup>8</sup> But, of course, furrowed ornament does occur in some cases.

*Chronology* The dating of Slavonian culture is very debatable. The culture is usually assigned to the Copper Age (our Period III). But the exact parallelism between the form of the carinated cups and Bohemian vases of Period IV suggests a later date. Moreover, the Slavonian culture seems to be continuous with that of the Hungarian urnfields of Period V; it is the Bijelo brdo culture that takes its place on the Save and the Drave, and the Middle Bronze Age Pannonian ware of Tolna County definitely carries on the Slavonian tradition.<sup>1</sup>

*Affinities* In Slavonian ware diverse elements are apparently blended.  
*Nordic* Menghin,<sup>2</sup> like Schuchhardt, classes Slavonian ware in the  
*elements* Nordic group, and in view of the polygonal battle-axes associated with it, we must admit that a 'Danordic' element, come from either Upper Austria or Moravia, lay at the base of the complex. On the other hand, the same author admits powerful influence from Hither Asia, and herein he is certainly right.

*Cypriote parallels* Myres<sup>3</sup> and Hoernes<sup>4</sup> had long ago drawn attention to the remarkable parallels to Slavonian motives that occur in the Bronze Age pottery of Cyprus.<sup>5</sup> They cannot be accidental; though neither Cypriote colonists nor Cypriote pots need be postulated to explain the agreements, we must at least assume that trade-goods, perhaps textiles and wood-carvings, from that quarter had found their way to the mouth of the Drave.

*Relation to copper-bearing areas* It is highly suggestive that traces of the same influence can be recognized along two lines that radiate from Syrmia in the direction of metalliferous mountains. We have already noted the occurrence in the Mondsee pottery of Cypriote motives, and the Mondsee could have been reached up the Drave.<sup>6</sup> We must now pursue similar vestiges up the Save and the Bosna, where regular extensions of Slavonian ware or an allied complex are to be detected.

*Carniola and Bosnia* Thesites are the pile-dwelling of Brünndorf on Laibach Moor,<sup>7</sup> Čungar on the Una,<sup>8</sup> and Debelo brdo near Sarajevo at the head of the Bosna.<sup>9</sup> The material here gathered is not identical with that from Syrmia, but partly supplements our knowledge of it.

<sup>1</sup> Cf. p. 281 below.

<sup>2</sup> *Urgeschichte*, p. 764.

<sup>3</sup> *JRAI*. 1898, p. 174.

<sup>4</sup> *Urgeschichte*, p. 341; cf. Stocký, *PZC.*, p. 120.

<sup>5</sup> They occur already on 'red polished ware II', but ring flasks, quite like the Syrmian specimen, belong to 'red polished ware IV', Gjerstad, p. 126, 12.

<sup>6</sup> p. 127 above. A possible link is

supplied by the Bükkögl near Wildon (Styria) on the Mur, a hill settlement where furrowed pottery, reminiscent of Laibach and the Mondsee, has been found. The material is at Graz.

<sup>7</sup> The best account is still that of Munro, *Lake-dwellings*, pp. 169 ff.

<sup>8</sup> *WMBH*. iv, p. 73.

<sup>9</sup> *ibid.* iv, p. 38; v, p. 124; vi, p. 129 ff.

The classical Laibach pottery, that recurs also with Slavonian ware at Zlok near Pécs, is a fine black polished ware. Typical forms are amphorae with shoulder handles (Fig. 118), ribbon-handled jugs rather similar to those from the Mondsee or Michelsberg, but sometimes with an almost square body (Fig. 119), bowls with cruciform feet (Fig. 120), and strange lung-shaped vases.<sup>1</sup> A notable feature of the Laibach pottery is the tunnel handle, a tube on the inside of the vase joining two openings in the wall, that is here always horizontal as in Malta (Fig. 121, nos. 1901, 1924). The same handle is found at Debelo brdo.<sup>2</sup>

*Laibach  
ware  
forms*

*Tunnel  
handles*

The designs are executed partly by furrowing, partly in fretwork, as in Slavonia, and the motifs—squares, stars, cross in circles, &c.—are often the same. In Bosnia the curvilinear motifs seem to be absent. At Laibach big round bosses were also used decoratively.

*Ornament*

In addition to vases, clay figurines were manufactured at Laibach. They generally represent a clothed personage.

*Figurines*

Stone celts were very rare and of poor workmanship at Laibach. At Debelo brdo there were only two, both very rough, but polygonal battle-axes and finely worked flint arrow-heads were found.<sup>3</sup> Axes, picks, borers, and other implements of horn and bone were, however, quite common at all sites.

*Stone  
celts rare*

*Battle-  
axes*

The comparative rarity of stone implements is to be explained by the fact that the inhabitants of these stations already possessed metal. The Bosnian sites are admittedly Bronze Age, and at Laibach not only several flat celts of (?) copper, but also the mould for an axe of 'Copper Age' type was found. Axes of precisely the same type are quite common in the area occupied by Slavonian culture<sup>4</sup> and its extensions towards Carniola and Bosnia,<sup>5</sup> so we may identify their users with the authors of the culture under discussion. The axes sometimes occur in hoards, associated with flat celts (Fig. 113),<sup>6</sup> and spread from the Danube valley into the South Tyrol,<sup>7</sup> and Dalmatia.<sup>8</sup>

*Copper*

*Copper  
axes*

Munro assigns to the Laibach culture certain objects of much later type said to have been found in the Moor. These include a winged celt of type B3,<sup>8</sup> a dirk of Italian pattern like

*Middle  
Bronze  
Age  
types*

<sup>1</sup> The best illustration is in Reinerth, *Chron.*, pl. XII, 14.

<sup>2</sup> *WMBH.* v (1897), p. 125, pl. LI, 8 and 10.

<sup>3</sup> *WMBH.* iv, p. 54.

<sup>4</sup> *Vjes. HAD.* vi (1902), pp. 39, 60 ff.

<sup>5</sup> *WMBH.* xi, pp. 43, 54.

<sup>6</sup> *WMBH.*, l. c., pls. xiv, xv. Note that the celts have very mature expanding blades.

<sup>7</sup> *JfA.* vi (1912), p. 72, fig. 19.

<sup>8</sup> For the 'types' see plates at end of volume.

A2, and a slashing sword of type C3. All these objects belong typologically to the Middle Bronze Age, and their presence seriously complicates the question of the date of the Laibach culture.

*Chronology* All recent writers have assigned it to the Copper Age on the strength of Mondsee parallels, Menghin admitting a survival into the Early Bronze Age as possible.<sup>1</sup> It is not so clear that the late-looking bronzes should really be ignored. If the Laibach pottery has analogues in the Mondsee (the Copper Age date of which is not beyond suspicion), it has no less real affinities with the Middle Bronze Age fretwork pottery of the South-West German Tumulus culture. And, despite the typologically early company in which the shaft-hole axes are found and the absence of tin from such as have been analysed, we shall see that a very similar form was being manufactured beyond the Tisza even in the Late Bronze Age. We therefore suspect that Period IV should be regarded as the upper limit for the mature Laibach culture, and that a survival to a much later date is by no means excluded.

*Affinities* In the constitution of the Laibach culture the south-eastern element, detectable in Syrmia, is even more obvious; for *Cypriote* Laibach pottery exhibits not only Cypriote motifs but also *pot shapes* Cypriote forms.<sup>2</sup>

*Eastern elements: the axes* The copper axe, too, is in a sense eastern, but, though there are a few specimens from Bulgaria,<sup>3</sup> it is not an Aegean type. On the other hand, a rather similar axe was, as noted above, manufactured beyond the Tisza, but the real home of the type seems to lie beyond the Carpathians. G. Nagy<sup>4</sup> assigns it to a second wave of nomads from the steppes who had followed the axe-adze folk, and certainly there are very many similar axes in South Russia.<sup>5</sup> Curiously enough the closest parallel to the Laibach figurines comes from a barrow in the same area.<sup>6</sup>

*Relations with Italy* In the Laibach culture relations with Italy and the Western Mediterranean are also discernible. The late bronzes are unmistakable Italian types, but, as their context is suspect, they cannot be used as guides to the origin of the Laibach culture. A real link with the Adriatic region is, however, provided by

<sup>1</sup> *Urgeschichte*, p. 764.

<sup>2</sup> Most notably the lung-shaped askos (Gjerstad, p. 146, 1), then the amphorae with shoulder handles (*ibid.*, p. 136), and the jug (*ibid.*, p. 146, 7), all in black slip ware; but the skeuo-

morphic origin of these shapes reduces their significance.

<sup>3</sup> Casson, *Macedonia*, p. 170.

<sup>4</sup> *AE*. xxxiii, p. 315.

<sup>5</sup> Tallgren, *Pontide*, pp. 167 ff.

<sup>6</sup> *Ibid.*, fig. 66, 2-4 (Ul, Kuban).

a vase standing on a cruciform foot from Vlasča Jama in Istria.<sup>1</sup> And then the tunnel handles from Laibach and Debelo brdo are exactly like those from Malta<sup>2</sup> and Sardinia.<sup>3</sup> It is difficult to say in this case in which direction the influence went. Istria was certainly affected from the Danube basin, *not* vice versa. But, though Menghin would derive the horizontal tunnel handles of Laibach from the vertical ones of Baden and Starý Zámek, it is difficult to regard them as older than the 'neolithic' specimens from Malta, uncertain though the chronology of the Maltese 'Stone Age' be. In any case it is clear that the Save valley was already, as in Roman times, serving as a way of intercourse between the west and the Danube valley; and that Brünndorf was the forerunner of Nauportus.

The substratum of the culture of Slavonia and Laibach is doubtless Danubian, and in its formation an intense influence from the Aegean had played a prominent part.<sup>4</sup> But if Slavonia were the focus from which that influence was transmitted northwards to the Austrian Alps, we must none the less affirm that a counter current in the opposite direction brought Nordic battle-axes and presumably Nordic warriors<sup>5</sup> to the Save. These must have played their part in opening up communications up-stream with Italy, while in Bosnia it was the advent of this composite stock that put an end to the belated Danubian culture of Butmir.

We must thus imagine the plain occupied by a multiplicity of distinct ethnic groups as the dryness of the Subboreal epoch made itself felt; Danubian peasants, prospectors from beyond the Alps, pastoralist nomads from the eastern steppes, and warlike highland tribes under Nordic chiefs all jostled one another. And there was yet another ethnic element.

### III. THE AEGEAN INFLUENCE ON THE MIDDLE DANUBE

Of far greater significance either than the intrusions of new ethnic elements from the north-east and north-west, or even

<sup>1</sup> *MAGW.* xliii, p. 100.

<sup>2</sup> *Arch.* lxvii, pl. xxv, 2; *LAAA.* iii, pl. xvi, 7, 13, &c.

<sup>3</sup> *BP.* xli, p. 102.

<sup>4</sup> Stocký, who assigns a very prominent role to Laibach, writes, *PZČ.*, p. 120: 'the development (of the Laibach style) may perhaps be traced in the Danube valley. In my opinion it is the last outpost of the *Bandkeramik*, but, if not genetically related to Cyprus, the similarity of patterns in the

two areas is more than a mere case of convergence.'

<sup>5</sup> Some skeletons were found in Laibach Moor: according to von Luschan, they were negroids; Ugo Vram classed them as Eurafrian, while Schliz assigned the skulls to his *Pfahlbautypus*. The indices were 72.8, 75.5, and 76.5 respectively: see Zupanič, 'Les premiers Habitants des pays Yougoslaves' in *Rev. Anthr.* 1919, p. 28.



the Oriental 'influences' on the Save and Drave, was the continued percolation of the Danube valley proper by Aegean or Anatolian influences that now ultimately reached Bohemia. In Period III intercourse with the south-east was brisker than ever. It resulted in the course of the period in the foundation, along the great waterways, of a quite new series of cultures in which native Danubian II survivals and ill-defined 'Nordic' intruders are entirely absorbed in elements derived from the victorious East, and in which the Bronze Age civilization of Central Europe is directly rooted.

*The Tisza* The monuments of the new composite civilization are two series of fresh settlements, founded on the auriferous rivers  
*cultures of* rising in the Transylvanian goldfields—the Lower Tisza, the  
*the* Aranka, and the Maros—and on the approaches to the metal-  
*Bronze* liferous mountains of Slovakia. Analogous settlements at  
*Age* favourable points on the Middle Danube are likewise to be expected, and can be demonstrated at one point at least—the so-called *terramara* of Gerjen in Tolna County.

*Perjámos* The sites of these settlements all lie along the high terraces running parallel to the great rivers, at points raised above the level of any normal flood. The first group is represented by Perjámos on the Aranka<sup>1</sup> together with the first settlement at the Nagy Sanc of Pécska<sup>2</sup> on the Maros, the village and cemetery of Ószentiván near the confluence of the Maros and the Tisza,<sup>3</sup> and the graves of Ó Beba.<sup>4</sup> The type stations of  
*Tószeg* the second group are the lowest level at Tószeg near Szolnok,<sup>5</sup> the newly discovered site at Nagy Rév a little farther south, together with a few ill-explored stations farther north such as Tiszafüred and Szihalom in County Borsod,<sup>6</sup> and very probably Vadász in Abauj.<sup>7</sup>

*Pottery* The pottery from both groups is very similar in technique and ornamentation. The standard ware is always slipped and polished save in a class of large vessels, the lower half of which is left rough or even roughened intentionally as in the Jaispitz ware of Moravia. Its colour is either a sooty black or a

<sup>1</sup> Márton Roska, 'Fouilles aux remparts de Perjámos', reprinted from *Földrajzi Közlemények*, xxxix.

<sup>2</sup> *Dolgozatok*, iii (1912), pp. 1 ff.

<sup>3</sup> *Dolgozatok*, 1927, pp. 94 ff.; 1928, pp. 148–243.

<sup>4</sup> *AE*. xxiv, pp. 85 f.; *AfA*. xv (1917), p. 273 (von Miské), *Dolgozatok*, 1927, p. 83.

<sup>5</sup> The best account yet published is in

*Jelentés a Magyar Nemzeti Múzeum 1907 évi*, p. 178. Dr. Márton has kindly supplemented this with much fresh information verbally.

<sup>6</sup> *CIA*. 1877, 'Résultats généraux', pp. 37–8.

<sup>7</sup> There is an amphora like the Tószeg form 7 from here in the Poprad Museum.

reddish orange according to the firing; often the surface is mottled red and black. Decoration, when present, is practically confined to an incised or grooved line round the shoulder from which hang fillets, grooved or in relief, but large jars are encircled with plastic rope ornaments. Small nipples, generally in pairs, are not uncommon in the Tószeg group, while at Perjámos the grooved lines are sometimes set off by dots. Exceptionally the vases are incised—at Perjámos with hatched arcs,<sup>1</sup> at Tószeg with crosses in panels.<sup>2</sup> One class of dishes from Nagy Rév bears a cross, painted in dark brown, on the bottom. Inside an urn from Ószentiván was a swastika in relief.<sup>3</sup>

In each group of settlements the commonest vase was a small jug with a long neck, generally separated from the globular body by a marked shoulder. The typical Perjámos jug is provided with two handles, starting from the rim, and so is hour-glass shaped (Fig. 122); the base is either concave or pointed. At Tószeg and Nagy Rév there is only one handle, attached half way down the neck (Fig. 124). Many of the jugs in the Tószeg group are provided with a round pedestal or a curious square base to stand upon (shown inverted in Fig. 123). An important feature is the duplication of the neck in some specimens (Fig. 125).<sup>4</sup>

Forms

Jugs

Double-necked  
flasks

Other forms shade into insignificance beside the superabundance of small jugs found at each site. None the less the following shapes may be noticed:

1. Lids, either flat with a loop on the top<sup>5</sup> or conical with a button handle (Fig. 126 a)—common to both groups.
2. Rough vase-stands with a flat base and low cylindrical walls perforated with large holes<sup>6</sup>—common to both groups.
3. Wide dishes with a small handle under the broad rim—Perjámos (Fig. 126 d).
4. Conical dishes with flat projections, serving as handles, on a level with the rim—Nagy Rév.
5. Very large jars with flaring trumpet necks, and handles on the shoulder—Ószentiván (Fig. 127).<sup>7</sup>
6. Ovoid amphorae with small handles on the belly, ornamented by roughening the lower part of the belly—Tószeg.
7. A few globular or carinated pots (? pyxides) were found in

<sup>1</sup> 'Perjámos', figs. 22 and 42.

<sup>5</sup> 'Perjámos', fig. 30.

<sup>2</sup> *Jelentés*, l. c., fig. 25, 6.

<sup>6</sup> *Ibid.*, fig. 43 (wrongly described as a lid).

<sup>3</sup> *Dolgozatok*, 1928, figs. 22, 3 and 67, 1.

<sup>7</sup> *WPZ*. xv (1928), p. 22.

<sup>4</sup> *AE*. xxix (1909), p. 156 f.

the lowest levels at Tószeg. Dr. Márton rightly compares them to 'neolithic' (Bükk) types, but of course similar forms were current at Troy in the Bronze Age.

8. Grave 10 at Ószentiván contained a pedestalled bowl of the usual Danubian II type and degenerate Polgár beakers (Fig. 126 b-c)<sup>1</sup>—precious links with the older civilization of the region.

*Implements* Stone implements were still used by the inhabitants of these stations. The lowest levels at Tószeg have yielded several celts, including one or two of shoe-last type<sup>2</sup>; at Perjámos celts were rarer. In addition, all sites yielded scrapers, knives, and sickle-teeth of flint. Bone was used for the manufacture of chisels, awls, and very neat needles. Picks and hammers of deers' horn were particularly plentiful everywhere.

*Bronzes* As weapons we must class several stone hammer-axes from Perjámos—some with a distinct knob head and expanding blade<sup>3</sup>—and simpler bored axes from Tószeg. Apart from shapeless scraps, metal has only been found at Perjámos and Pécska.

*Ingot torques* The finds include hollow gold disks, perforated for sewing on garments,<sup>4</sup> (?) bronze pins of type A1, and an 'ingot torque' (Fig. 128). This most important object was unearthed in the upper stratum at Perjámos.<sup>5</sup>

*Graves of Ó Beba* If the settlements so far explored are poor in metal, all the more importance attaches to the graves of Ó Beba, if they really belong to this epoch. In this cemetery articles of importation and exportation were significantly juxtaposed. Mediter-

*Knot-headed pins* ranean shells (*Pectunculus* and *Cardium*), a stone ring, perhaps knot-headed pins of bronze (type A1), and ingot torques were associated with gold ear-rings with flattened ends, a gold disk with a punctured geometric pattern, and perforated boars' tusks.

*Cypriote daggers* To the same cultural complex we should assign a hoard of Cypriote daggers discovered at Csorvás near Arad, as well as other daggers of the same family from Ó Szöny on the Danube in County Komárom,<sup>6</sup> Stillfried on the March, and Switzerland. So too certain thin gold disks, designed for sewing on garments, from Hungary and Lower Austria,<sup>7</sup> reveal Oriental influence. They are ornamented with three conical bosses. The hammered cones are to be regarded as barbaric versions of the coiled wire cones soldered on to rings from 'proto-

<sup>1</sup> *Dolgozatok*, 1927, p. 96. Another peculiarity of this grave was that the skeleton lay on its stomach.

<sup>2</sup> *Jelentés*, p. 178.

<sup>3</sup> 'Perjámos', fig. 32.

<sup>4</sup> *Dolgozatok*, 1912, fig. 7.

<sup>5</sup> *op. cit.*, fig. 33, 4.

<sup>6</sup> *Antiquity*, 1927, p. 88 and fig. d: Pulszky, *Reskor*, p. 63.

<sup>7</sup> Hampel, pl. XLVII.



FIG. 122. Perjámos jugs, Ószentiván. University Museum, Szeged.  $\frac{3}{10}$



FIG. 123. Square-footed pot, Tószeg A. A.M.Nemzeti M.  $\frac{1}{3}$



FIG. 124. Tószeg A jug. A.M. Nemzeti M.  $\frac{1}{5}$



FIG. 125. Two-necked jug. Tószeg A. A.M.Nemzeti M.  $\frac{1}{3}$

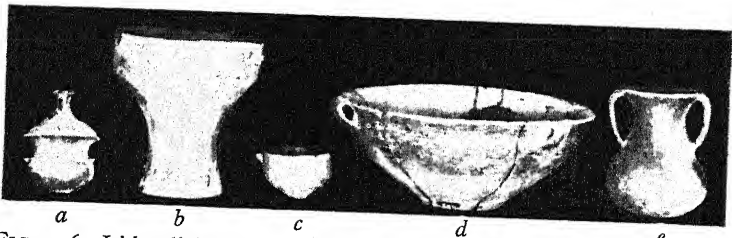


FIG. 126. Lids, dishes and Polgár forms from Ószentiván. University Museum, Szeged.  $\frac{1}{10}$



FIG. 127. Pithos from Ószentiván. University Museum, Szeged.  $\frac{1}{12}$



historic' graves at Ur. They reveal at the same time the source of a motive which was later taken over from the goldsmith by the potter.

The habitations of the Early Bronze Age folk of the Tisza valley appear to fall into two classes. At Perjámos and Ószeniván, though two or three layers of burnt clay-plaster,<sup>1</sup> hearths, and a few irregular groups of post-holes were identified, neither Dr. Roska nor Dr. Banner succeeded in plotting the

*Dwellings*

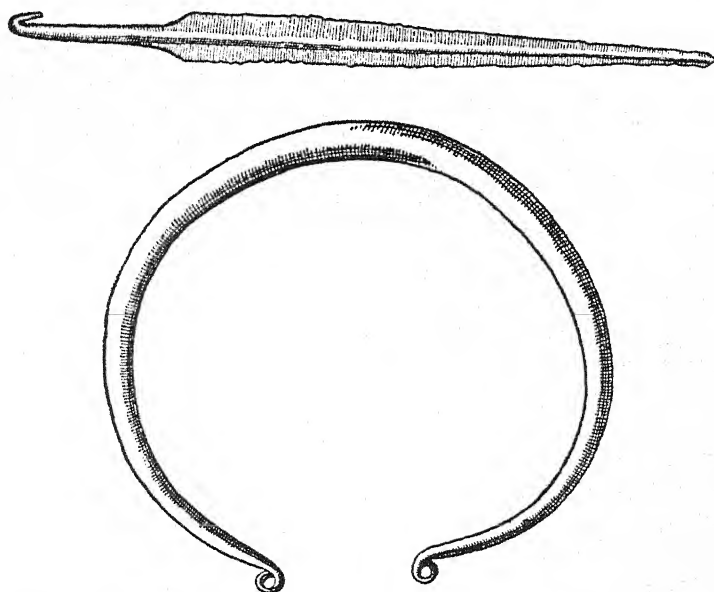


FIG. 128. Cypriote dagger, Csorvás,  $\frac{1}{3}$ , and ingot torque, Gáta,  $\frac{1}{3}$   
After *Antiquity*.

outline of any regular house on the ground level.<sup>2</sup> On the other hand, they found bell-shaped pits cut, in the löss, two or three metres deep, and one or two metres in diameter at the base, like those illustrated in Fig. 140. These contained sherds, including complete vases, loom weights, implements, and kitchen refuse. The mouth of one such pit was encircled with post-holes. Dr. Roska interprets the bell-shaped excavations as winter dwellings, but the author prefers to regard them as silos; it is impossible to understand how any one could sleep in such a confined space.

*'Pit-dwellings'*

At Tószeg and Nagy Rév, as probably at Pécska, the houses

*Rectangular houses*

<sup>1</sup> Forming a deposit some 60 cm. deep.

<sup>2</sup> From the shape of the layers of burnt clay Roska infers that the houses at Perjámos were oval.



were all admittedly on the ground level. They were roughly rectangular structures reminiscent of the *megaron* type.

It is possible that Tószeg, Nagy Rév, and Perjámos were protected, even at this date, by moats. Recent investigations, however, suggest that the 'ditches' at Tószeg were really the arms of an old brook on the delta of which the village would have been planted.

*Graves* The only graves yet identified as certainly belonging to the people under discussion are those of Ószentiván. Here burial in the contracted posture in trench-graves was the rule, the corpse generally lying on its right side. The same rite was observed at Ó Beba, but the rarity of ceramic remains makes the attribution of the burials to the Perjámos culture a little dubious.<sup>1</sup>

The dwellers along the Tisza possessed domestic animals, especially swine, and cultivated grains. Fish and mussels played a prominent part in their diet. They also hunted game, including the red deer and the wild boar. The abundant remains of these forest animals show that the plain on both banks of the Tisza was still wooded even in the Subboreal era. The presence of considerable forests must have been one factor in dictating the choice of river banks and the shores of lagoons as sites for habitation. At the same time the distribution of the settlements reveals clearly enough the importance of trade to their inhabitants.

*Chronology* The dating of the Perjámos culture to the latter half of Period III and the beginning of IV rests, in the first place, on typological considerations suggested by the Early Bronze Age ingot torque from the upper levels. It is confirmed by the whole stratigraphy of the mound of Tószeg, which we shall describe in Chapter XIV, and by the connexion with the Lengyel culture so obvious at Ószentiván.

*Danubian survivals* The civilization revealed in these settlements along the Tisza and the Maros is in one sense a continuation of the old Danubian II culture which, as we saw, lasted in this region into Period III. So, for instance, the square base of the Tószeg jug is just a development of the cruciform foot of Óbessenyő. The most conclusive proof of the continuity of culture is, however, the pedestalled bowl from Ószentiván. Anticipations of Perjámos forms in Danubian II deposits (jugs of type G) point the same way.

<sup>1</sup> It is in any case certain that graves of later date occurred at the site; von Miské has confused the furniture accompanying the various interments.

But the fundamental change in the form and technique of the pottery indicates the victorious impact of a new influence. The ceramic evidence marks the new element unambiguously as Anatolian. The hour-glass Perjámos jug is a characteristic Trojan form.<sup>1</sup> No less essentially Anatolian are the two-necked flasks from Tószeg.<sup>2</sup> The pointed bases are again at home in Cyprus and Anatolia.<sup>3</sup> With the supports, type 2, we may compare Schliemann Sammlung no. 2441; with the jar of Fig. 127, no. 2310; with the Tószeg jugs, pithoi like no. 2491. So, too, the system of ornamentation employed both at Perjámos and Tószeg is in its essence Hubert Schmidt's 'neck and shoulder' style from Troy II.<sup>4</sup> And the cross, painted on the base of the Nagy Rév dishes, is a favourite Trojan device and there, too, is sometimes painted in dark brown (? varnish) on buff clay<sup>5</sup> on the bottom of dishes (but inside). The fabric of the Tisza wares, with their variations in tint from black to red and mottling, is no less characteristic of Anatolian ceramics.

The bronze objects, either certainly imported, as the Cypriote daggers from Csorvás, or of West Asiatic type, like the ingot torque from Perjámos and the pins and ear-rings from O Beba, are the natural complements to these ceramic finds. Indeed, so intensive was the Anatolian influence all along the Tisza, that one might be tempted to ascribe the foundation of the new villages to actual settlements of Asiatic traders and metallurgists among the native population. In view of the evident relations with the east enumerated in section I of this chapter and the importance of allied forms in the developed Bronze Age, we must indeed recognize other elements. But there can be no doubt that the Hungarian Bronze Age was inspired primarily by Western Anatolia and the Aegean.

That the culture just described was not confined to the Tisza basin is proved by a stray jug with square pedestalled foot of Tószeg type found by Wosinski deep down in the mound of Gerjen.<sup>6</sup> The settlement lies on the bank of the

*Trojan  
parallels*

*Asiatic  
bronzes*

*Gerjen*

<sup>1</sup> SS., no. 1880 is the most exact parallel.

<sup>2</sup> Such flasks are very common both at Troy and in Cyprus; but there is a specimen from Tsangli VI (Thessaly, Period III) (*W. & T.*, fig. 59, c) even more like that illustrated here. Cf. also Gjerstad, p. 98, 12.

<sup>3</sup> Gjerstad, p. 111, jug 1-2.

<sup>4</sup> A very striking instance is seen in SS. 2347, where the ornamentation is

combined with a shoulder nipple precisely in the Tószeg style. The form is that of our fig. 123.

<sup>5</sup> SS., nos. 1902, ff. Cf. Rey, *Macédoine*, pl. XXV, 5 for a more exact parallel.

<sup>6</sup> *TT.*, p. 423 and pl. civ, 16. The vessel was found at a depth of 1.70 m., the lowest point reached by the trench in question.

Danube north-east of Szekszard, and seems to have resembled Tószeg and Pécska in its location and structure; but unfortunately the good father paid little attention to stratification or to unornamented sherds. A double-necked flask has also been found in Tolna County,<sup>1</sup> and it may be suspected that one cemetery at Lengyel belongs to this period.

Though the evidence is still incomplete, sherds of Tószeg ware from Lontó (Hont County)<sup>2</sup> suggest that the Tószeg-Perjámos culture had reached the copper-bearing mountains of Slovakia.<sup>3</sup> We must now see how it spread to the stanniferous region of Bohemia.

<sup>1</sup> Wosinski, *Ink. Ker.*, pl. L; *AE.* xix, p. 158, fig. 7.

<sup>2</sup> In the City Museum, Bratislava, nos. 720-1.

<sup>3</sup> The distribution of the axe-adzes in

Slovakia is only intelligible on the assumption that copper was being mined there. One was actually found at Neusohl (Baň Bystrica), *AE.* xxxiii, p. 307.

## XII

### THE EARLY BRONZE AGE

THE extension of the current just described, along ways which were already being opened up towards the end of Period II, resulted in the rise of the first independent bronze-using civilization in continental Europe; perhaps in the beginning of the Bronze Age *sensu stricto* itself. In Northern Bohemia open löss patches extend right to the foot of the stanniferous mountains, and the streams flowing through them may well have carried alluvial tin in ancient times.<sup>1</sup> And here in Bohemia the first centre of the Early Bronze Age culture was to arise. Bohemia, Moravia, and Silesia had already been saturated with foreign elements—Nordic, Corded Ware, and Bell-beaker folk before the end of Period III. The fusion of these extraneous elements with the old Danubian substratum under the reinforced influence from the south-east led to the rise of a new composite culture along the main trade routes.

The resultant complex forms the immediate prelude to the Aunjetitz culture of the Early Bronze Age and has, therefore, been appropriately christened the proto-Aunjetitz culture. A local variant of it, in which the Corded Ware element is particularly prominent, is the Marschwitz culture of Silesia and the adjacent parts of Bohemia. The proto-Aunjetitz culture is represented by extensive cemeteries in Silesia, Thuringia, Bohemia, and Moravia. The dead were almost always buried<sup>2</sup> in the contracted attitude; in some few cases the grave was surmounted by a barrow;<sup>3</sup> exceptionally in Silesia skulls were interred alone apart from the trunk,<sup>4</sup> as at Ofnet in epipalaeolithic times and in chalcolithic graves in Bulgaria. In Bohemia a relatively large number of the skulls from proto-Aunjetitz graves have been trepanned.<sup>5</sup> The skulls are dolichocephalic, but their conformation suggests to Schliz an admixture of Bell-beaker folk in the population.

Metal grave-goods were still extremely rare and were limited to simple pins, awls, and thin wire rings or bracelets which, none the less, at times contain a small percentage of tin.<sup>6</sup>

<sup>1</sup> Birkner in *MAGW.* lvii (1927), pp. (156) f.

<sup>2</sup> Though isolated cremations are reported from North Bohemia (*Real.* i, p. 262).

<sup>3</sup> *Real.* ii, p. 70.

<sup>4</sup> *SV.* vii, p. 72 and fig. 279.

<sup>5</sup> *PA.* xxx, pp. 78 ff.: *WPZ.* ii, p. 67.

<sup>6</sup> 6 per cent at Marschwitz, *SV.* iii, p. 38: cf. *JfA.* i, p. 185. Gold is rare.

*Proto-  
Aunjetitz  
Marsch-  
witz  
culture  
Burial  
rites*

*Metal*

- Besides these simple types graves at Velka Ves in Bohemia<sup>1</sup> and Opatovice in Moravia<sup>2</sup> contained knot-headed pins (A1) of true bronze. Spiral pendants of gold occur, but rarely. On the other hand, implements of stone are still common. In the Marschwitz graves of Silesia we find very fine stone hammer-axes with a semicircular cross-section and overhanging butt-end (Fig. 129 a), plainly a contribution from the Corded Ware culture. The same type of axe is met in the tumuli of East Moravia<sup>3</sup> and at Hissarlik,<sup>4</sup> while analogous types are spread all over Russia. In Silesia good flint daggers (Fig. 129 b), imitating the Ciempozuelos type, and stone wrist-guards, as in Bell-beaker graves, were also deposited with the corpses. Wrist-guards also occur in early graves in Bavaria, but here already with triangular daggers.<sup>5</sup> The corresponding graves in Bohemia and Moravia contain in general only flint celts of Nordic type,<sup>6</sup> horn axes with a rectangular shaft-hole, atypical flint knives, and arrow-heads of bone or flint.
- Pottery** All the tombs of this group contain an abundant ceramic furniture. The most characteristic and widely distributed form is the pouched jug and the deep cup formed on the same pattern (Fig. 135).<sup>7</sup> The rim is regularly everted. Common, too, is a three-footed bowl;<sup>8</sup> it might be compared to the form sometimes associated with bell beakers, but the latter type never has three feet. The Marschwitz graves of Silesia contain in addition flower-pot and ledge-handled beakers of Lower Oder types like Fig. 94. In Bohemia and Moravia open bowls with wide brims drawn out into four points and with handles below the brim are not uncommon (cf. Fig. 142).<sup>9</sup>
- Ornament** Proto-Aunjetitz pottery is relatively rough, but often shows simple linear ornamentation. The distinction between Marschwitz pottery in the narrower sense and proto-Aunjetitz<sup>10</sup> is only one of degeneration; for in the former ware (in Silesia and more rarely in Bohemia<sup>11</sup>) the designs are formed by the impression of a cord. They include chevron patterns (Fig. 135). Horizontal bands and hanging fillets (sometimes combined with shoulder warts) are more generally characteristic groove like the Aunjetitz vases of fig. 139. Cf. WPZ. iii, p. 35, 1-3.
- <sup>1</sup> Schráníl, *Studie*, p. 91.
- <sup>2</sup> *Real.* ii, p. 71.
- <sup>3</sup> Červinka, *Mor. St.*, pp. 152 ff., figs. 84, 89, 90.
- <sup>4</sup> *Man.* xxiv (1924), 51.
- <sup>5</sup> *MAGW.* liv, p. 113 and fig. 10.
- <sup>6</sup> *PA.* xxxii, p. 213, perhaps already Aunjetitz.
- <sup>7</sup> In Moravia they show a shoulder
- <sup>8</sup> Stocký, *BAP.*, pl. XLIX, 3; WPZ. iii, p. 36, fig. 6, 7.
- <sup>9</sup> WPZ., *l. c.*, fig. 1, 6.
- <sup>10</sup> Cf. Winckler, *Mannus*, *Biblio.* 22, pp. 135 f.
- <sup>11</sup> Stocký, *op. cit.*, xlvii, 1 and 5.

of proto-Aunjetitz ware.<sup>1</sup> Dr. Seger has recently published<sup>2</sup> a very handsome jug from Silesia with ornamentation radiating from the base in the style of some Bell-beaker decoration.

The position of the settlements and the extensive cemeteries suggests higher agriculture combined with fairly regular trade. Summary

'War' was obviously not infrequent.

The dead were buried with ornaments and weapons.

Though metal was not altogether scarce it was almost certainly not worked within the groups, but obtained by barter. The local medicine-men could successfully perform the operation of trepannation.

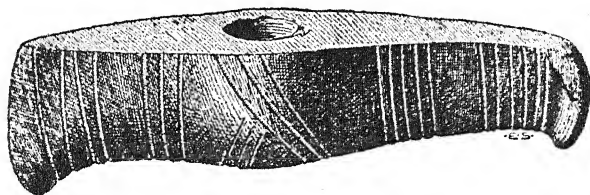


FIG. 129.

Battle-axe and flint dagger from Marschwitz graves, Silesia, after Seger.  $\frac{1}{2}$



Flint and stone celts remain the characteristic tools, but horn implements, including perforated axes, are plentiful.

The bow, the dagger, and the battle-axe alike are used as weapons.

Rings, bracelets, and pins of copper or bronze and rare gold trinkets are worn as ornaments.

These traits reveal the constitution of the culture. The flint celts afford a certain link with the Nordic groups and some ceramic types may be connected with the Bernburg series.<sup>3</sup> Even more obvious is the affiliation with the Battle-axe cultures attested by the weapons and confirmed in some areas by the decoration of the pottery and the occurrence of Lower Oder vase forms. The daggers and the bracers have been taken

*Origin*

<sup>1</sup> Stocký, *BAP*. xlvii. 2, xlviii. 9.

<sup>2</sup> *Altschl.* i (1926), pp. 214 f. and pl. xxxiii. Seger's dating is confirmed by the discovery of a similarly decorated cup in a grave at Sány near Podebrad,

*PA.* xxxiv (1925), p. 326, fig. 136.

<sup>3</sup> Niklassen, *JST.* xiii; Winckler, in *Mannus-Bibl.* 22, pl. ix; Černý, *WPZ.* v, pp. 52 f.; these authors exaggerate the Nordic elements.



over from the Bell-beaker folk. Their influence is likewise seen in the decoration of a few isolated vases.

The south-eastern element, however, is not only revealed in the gold pendants and Cypriote 'knot-headed' pins, but absolutely dominates the pottery. The curious pouch-shaped jug which characterizes our culture and for which various unlikely derivations have been proposed, becomes intelligible as soon as the pottery from Tószeg I be taken into account; there we get in a still more classic shape the everted lip, the little ring handle, the elongated form, and the decorative band with hanging fillets encircling the neck. The shallower type of pouched mug can be exactly paralleled at Ószentiván as noted on p. 217. No less distinctive of the same settlement is the ruffling of the lower surface observable on some proto-Aunjetitz vases. The dishes with handles under the rim again have parallels at Perjámos and Ószentiván (Fig. 126 d), while the variety with a hollow foot may be regarded as a survival from Danubian II, such as was observed at the last-named site.

The proto-Aunjetitz culture is thus a complex hybrid; Nordic, Corded Ware, Bell-beaker, Danubian, and south-eastern elements were blended in it; it will be easier to estimate their relative importance when its younger development and continuation, the Aunjetitz culture proper, has been described.

### I. THE AUNJETITZ CULTURE

In the Early Bronze Age, on the basis of the proto-Aunjetitz culture just described, several local groups arose, clustering in the main along the trade routes connecting the amber deposits of Jutland with the Adriatic and Upper Italy, and the Bohemian tin with Slovakian copper lodes. The most original and distinctive of these groups is the Aunjetitz<sup>1</sup> culture itself which appears in a pure form in Bohemia, with colonies in Silesia and Thuringia, and in Moravia and Lower Austria, in a variant in which the Bohemian influence reacted on a proto-Aunjetitz substratum. In these regions the Aunjetitz culture developed peaceably for a long time. It was the work of a race of traders, industrialists, and agriculturalists who had appropriated the secrets of metallurgy taught by Bell-beaker folk and Trojan explorers. Their settlements are generally situated in the valleys, sometimes on hills.<sup>2</sup> The huts were

*Settle-  
ments*

<sup>1</sup> So called after a large cemetery south of Prague. Czech: Unětice.

<sup>2</sup> Šarka, Slánska Horá, Hradek near Časlau; Seger, *Real.* i, p. 262; ii. 72.

sometimes round 'pit-dwellings', at other times rectangular houses.<sup>1</sup>

The dwellings of the departed are far better known. The graves constitute regular cemeteries, comprising in one case ninety-nine graves. The corpse was normally interred in the contracted attitude facing southwards, on the right side, often protected by slabs of stone. One grave at Vepřek in Bohemia,<sup>2</sup>

*Burials*  
*Pithos*  
*Burials*

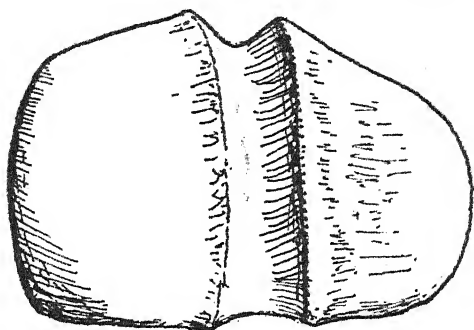


FIG. 130. Grooved hammer, Moravia, after Červinka.  $\frac{1}{2}$

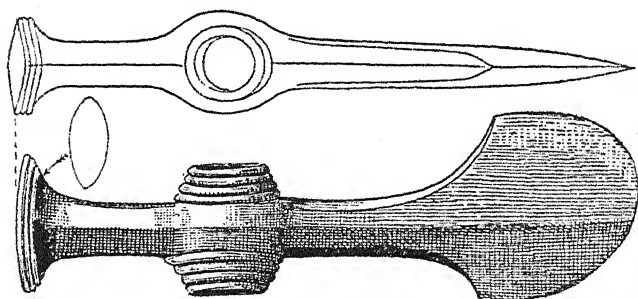


FIG. 131. Bronze Axe, Kamýk, after Schráníl.  $\frac{1}{2}$

and possibly one from Leuna near Merseburg in Thuringia,<sup>3</sup> were burials in jars as at Yortan, Orchomenos, and El Argar. Multiple interments and even megalithic cists are not unknown.

The Aunjetitz population were an essentially bronze-using people, yet the settlements yield many implements (even celts) of stone, bone, and horn. Characteristic are the hammer-stones<sup>4</sup> with a groove for binding thongs, a type which is met in ancient mines in the Iberian peninsula, Britain, and elsewhere<sup>5</sup> (Fig. 130).

*Survival*  
*of stone*

<sup>1</sup> *PA.* xxxiii, p. 335.

<sup>2</sup> *Real.* i, p. 262; Schráníl, *Böhmen*, p. 93.

<sup>3</sup> M. Halle.

<sup>4</sup> e.g. *Mor. Star.*, fig. 24.

<sup>5</sup> Cf. Evans, *Stone implements of Great Britain*, p. 209.

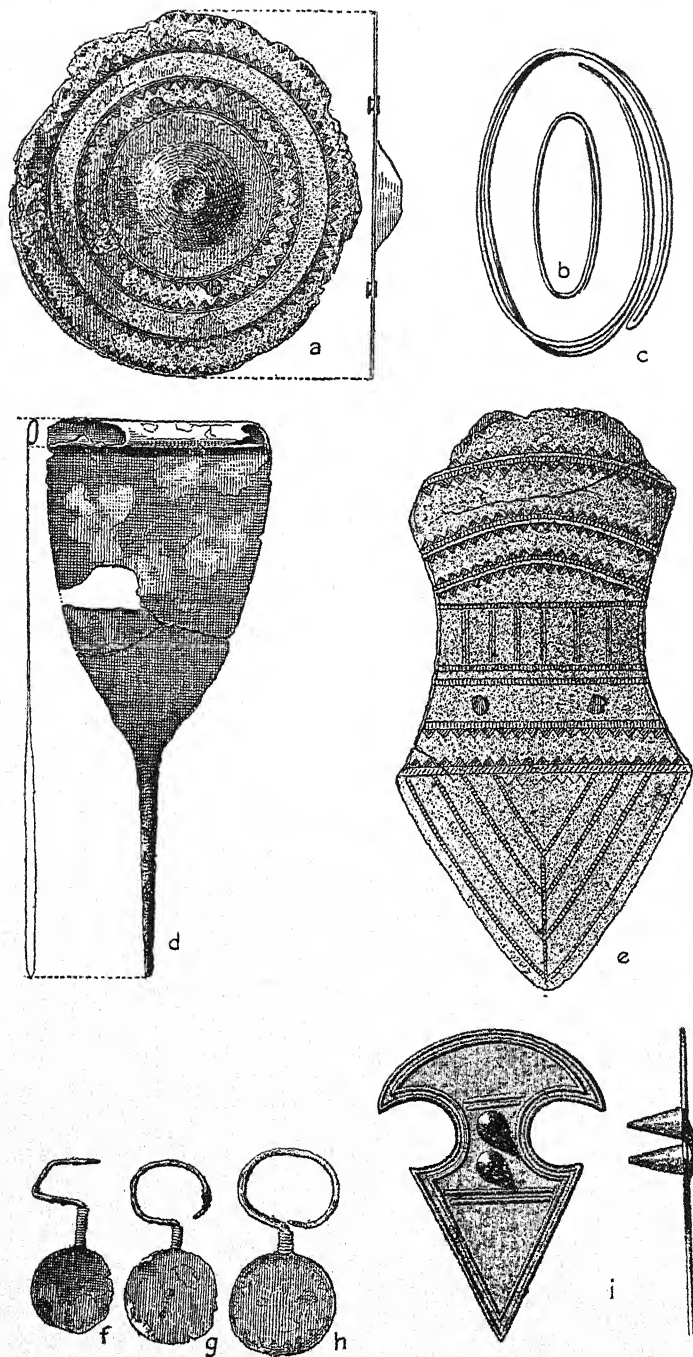


FIG. 132. Shield and disk-shaped ornaments and racquet pin from Punitz and Starý Bydžov.  $\frac{1}{4}$

Metal at this stage was always cast, and only finished off by hammering when cold. The moulds were often quite elaborate, consisting of two or even four distinct parts. Perhaps, too, the *cire perdue* process was already in use.<sup>1</sup>

Of metal tools the graves and settlements contain only flat or flanged celts and chisels, triangular knife-daggers, and quadrangular awls. In the hoards, celts of Italian pattern with a nick in the butt and bronze-hilted daggers are also met.

Hammer-axes of bronze with a knobbed butt, related to Hungarian types of Period V, were found in two Bohemian graves (Fig. 131);<sup>2</sup> and a Hungarian axe of type B was found in a late grave at Retz in Lower Austria.<sup>3</sup>

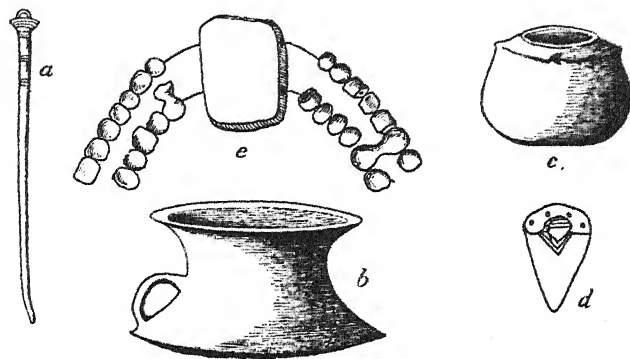


FIG. 133. Amber necklace, &c., Aunjetitz. *a*, *c*, *d*, *e*  $\frac{1}{2}$ ; *b*  $\frac{1}{4}$

Metal was more freely used for ornaments. The graves contain a wealth of pins (of which A2 is the most characteristic), bracelets, torques, ear-rings, plaques,<sup>4</sup> and even chains. Gold is now by no means rare, and amber is common in Bohemia and Silesia but exceptional in Moravia.

Necklaces of triple strings of amber beads are specially characteristic. The same type of centre-piece as that shown in Fig. 133 is met in Danish passage-graves, suggesting that the pattern at least was invented in Denmark, if the necklaces were not actually exported ready made. In addition, bronze copies of *Cardium* shells, small unsegmented beads of glass<sup>5</sup> paste, boars' tusks, *Dentalium* tubes, and bone or (?) ivory disks were sometimes worn.

<sup>1</sup> *Real.* ii, p. 155.

<sup>2</sup> Schráníl, *Studie*, fig. 12, 2 (Kamýk) and 4 (Slánska Horá); *Böhmen*, pl. XXIII.

<sup>3</sup> *MAGW.* lvii, p. 203.

• Disk-shaped with a central ompha-

los (Schráníl, pls. iv. 1, and vii. 1), or shield-shaped (Seger, *Altschl.* i. 1924, pp. 76 f.).

<sup>5</sup> Segmented beads of this material have been found in one Polish grave, Kozłowski. *Bronzu*, p. 27.

The bronzes<sup>1</sup> provide a basis for the division of the period into at least two phases; while the daggers found in graves show no development and the only change in the celts is the formation of a rudimentary stop ridge in late specimens, the pins and bracelets exhibit much greater variety. The knot-headed pin, A1, lasts throughout the period, its later forms being represented by B1 with separate spirals. The distinctive pin that at once marks any deposit where it occurs as Aunjetitz is A2, the result, as Lissauer<sup>2</sup> says, of forming the knot-headed Cypriote pin by casting in a mould. Equally early are bulb-headed pins with vertical perforation through the head, A4, also imitated in Danish passage-graves, but possibly of Hungarian origin; later specimens have hollow and decorated heads and often a twisted rectangular shaft.<sup>3</sup> Early, too, are those with a simple ring head—a cast variant of A1. To a rather later phase in Bohemia belong the various types with a wide flattened head, A5, A6, and B2, derived from a variant of A0 in which the head has been hammered out flat (C1).

All these pins are provided with an eyelet, loop, or tube, through which a thread was probably passed in order to keep them in place on the woollen or linen garments they were designed to fasten. A bronze chain replaces this thread in some late examples.<sup>4</sup> This striving for security seems ultimately to have led to the invention, or at least the adoption, of the safety pin; two very primitive violin-bow fibulae have been found in 'Aunjetitz' graves at Gemeinlebarn in Lower Austria,<sup>5</sup> and a fragment has recently come to light in a similar grave in Bohemia.

Wire bracelets of type A4 go back, like the torques A1, to the proto-Aunjetitz phase. Of the 'manchette' armlets, A2, Schráníl<sup>6</sup> considers the smooth type the older; those with horizontal ribs are later. Massive penannular bangles, A3, are commoner in the northern outposts than in the central region.

Professor Kossinna's<sup>7</sup> attempt to base a chronology on the percentage of tin employed has not led to convincing results; in areas remote from the centre of tin production typologically

<sup>1</sup> The 'types' referred to here and in the subsequent pages are illustrated on plates at the end of the book.

<sup>2</sup> *ZfE.* xxxix, p. 791; Kossinna claims it as an imitation of the bone pins of identical form found in Danish passage-graves; *ZfE.* xxxiv (1902), p. 197.

<sup>3</sup> Schráníl, *l. c.*; cf. von Richthofen,

p. 75.

<sup>4</sup> e.g. *SV.* iv, p. 12, fig. 6 (Gandau in Silesia); Schráníl, *Studie*, pl. v, 8 (Obora in Bohemia); cf. *Real.* i, p. 264.

<sup>5</sup> Schráníl, *Böhmen*, p. 101.

<sup>6</sup> *Studie*, p. 9.

<sup>7</sup> *ZfE.* 1902, p. 161; *Mannus*, iii, pp. 316 ff.; cf. Schráníl, *Studie*, p. 93.

late objects are found to be very poor in tin.<sup>1</sup> It is, however, likely that the objects of 'white metal'—an alloy of copper with as much as 17 per cent. of tin—which were manufactured on a large scale in Bohemia are generally later than those containing 10 per cent. of tin or less. White metal

Aunjetitz pottery is generally dark-faced or mottled, slipped, and polished. The most common and distinctive funerary form is the carinated mug with the handle springing from the keel. Pottery Forms: the mug The earlier forms are roughly biconical, but the neck is often separated from the body by a distinct shoulder groove, a feature characteristic of Aunjetitz ware in general (Figs. 137 a, 138), and especially prevalent in the easterly groups. The rim is

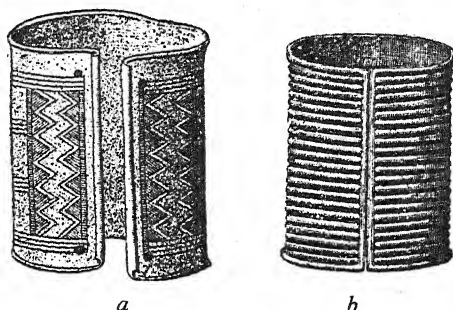


FIG. 134. Manchette armlet (type A2).  $\frac{1}{3}$   
a, Berelice (Mor.); b, Noutonice (Boh.).

always everted, and the base shows a dimple or low omphalos (Fig. 136 a). This type of mug is plainly just an angular version of the pouched jug of proto-Aunjetitz type. At the same time precise parallels in Tószeg B<sub>1</sub> (where the shoulder groove is also common) and in Slavonia (Fig. 115) show that the evolution did not take place without southern stimulus.

Then in the mature Aunjetitz phase the original body is entirely suppressed, leaving the classical form shown in Fig. 136 b. This second stage in the evolution of the Aunjetitz mug was first completed in Bohemia. In peripheral regions like Moravia biconical and even globular forms, like Fig. 137 a (a type also known in Tószeg B), lingered on much longer; the Bohemian form only filtered in gradually as a result of trade, to be modified in the conformation of the rim in the south.

<sup>1</sup> In Silesia a winged celt contained 92 per cent. Cu., no Sn., and only 0.3 per cent. Sb.; and a flanged celt with rudimentary stop-ridge, 98.6 per

cent. Cu. (*SV.* 1897, pp. 349 f.); an arm cylinder from Stollhof in Lower Austria was made of pure copper (*Montelius, AfA.* 1899, p. 474).



Fig. 137 d shows another type of mug with cylindrical body and three little feet—a Troadic feature!—regularly used in Moravian, Austrian, and Slovakian cemeteries.

*'Stone' types* The Aunjetitz cemeteries further yield an interesting series of squat pots<sup>1</sup> which Reinecke<sup>2</sup> long ago proposed to connect with Aegean stone vases. The imitation of stone work is particularly obvious in the cylindrical pyxis with undercut rim, and the round bowl from Charváty near Olomouc shown in Fig. 137 b–c.<sup>3</sup>

*Dishes* The dishes, often found in graves, generally have broad rims just under which a loop handle is often attached, precisely as at Perjámos and in Tószeg B (cf. Fig. 126 d). A more unusual form stands on a low pedestal,<sup>4</sup> and is evidently due to a survival of Danubian II tradition such as was seen, more clearly, at Ószentiván.

*Domestic ware* All the above-mentioned types recur in the settlements, generally in larger sizes (cf. Fig. 138). Other domestic types<sup>5</sup> are a sort of amphora with no very distinct neck (Fig. 139 a), deep bowls with horizontal handles (Fig. 139 b), a small jar, roughly biconical in shape but with a very rounded profile, a pot with cylindrical neck, and pithoi with roughened bodies but smooth necks. In some Lower Austrian settlements, vases with spikes on the inside (as in Starý Zámek II), sieve vases or 'cheese-strainers', and even spouted vases<sup>6</sup> are found.

*Ornament* The only regular ornamentation on Aunjetitz pottery is represented by small nipples on the shoulder;<sup>7</sup> there are generally three on mugs, one being replaced by a handle on amphorae. But one early vase from Moravia<sup>8</sup> is adorned with two rows of regular conical warts, while a few settlements have yielded knobbed ware like that described on pages 39, 81, and 120 above. Incised decoration occurs, but quite exceptionally, in Moravia, the ornament being limited to zig-zag lines (Fig. 137 a).

*Trade* The Aunjetitz population were essentially agriculturalists, but they were kept in regular connexion with foreign areas by pedlars who travelled with ready-made metal implements and ornaments over a wide area. The hoards, representing the

<sup>1</sup> For these cf. *PBL*. 1894, p. 52; *Pravěk*, 1903, pls. XIII–XIV; *Arch.* lxxiv, p. 164, fig. 8 c.

<sup>2</sup> *MAGW.* xxxii (1902), p. 126.

<sup>3</sup> Cf. Gjerstad, p. 114, pyxis 3, for a Cypriote parallel.

<sup>4</sup> Schráníl, *Studie*, fig. 16; he thinks they are derived from the Bulgarian, whereas Menghin (*Götze-Festschrift*,

p. 80) inverts the relationship.

<sup>5</sup> Cf. Kossinna in *Mannus*, iv, p. 180.

<sup>6</sup> e.g. Langenlois near Krems, *WPZ.* vii, p. 69, fig. 1; *MAGW.* li, p. 41.

<sup>7</sup> Many specimens in the Museums of Prague and Brno.

<sup>8</sup> *Real.* i, pl. 52 a (bottom left-hand corner) = *WPZ.* iii, p. 34, fig. iv, 3.



FIG. 135. Marschwitz jug, Guckelwitz near Breslau. M. Breslau.  $\frac{1}{2}$



FIG. 136. Aunjetitz mugs, Moravia. M. Brno

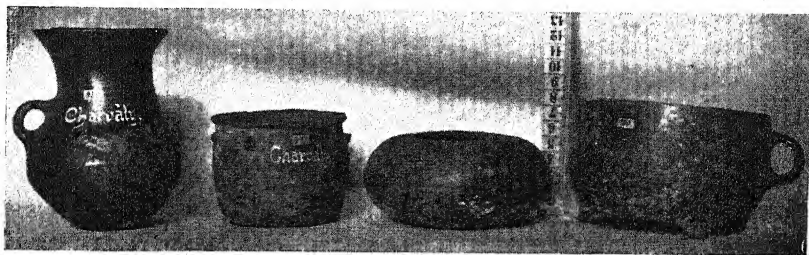


FIG. 137. Aunjetitz vases, Charvátý. M. Olomouc

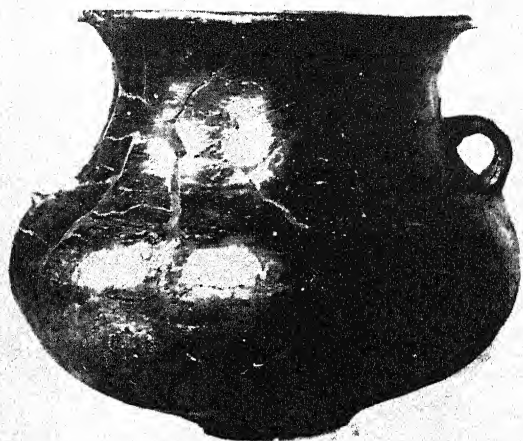


FIG. 138. Domestic ware, Vysočany. Narodni M. Prague.  $\frac{1}{4}$



FIG. 139. Domestic ware, Praha-Libeň and Kobylišy. Narodni M.  $\frac{1}{3}$

stock-in-trade of such pedlars, mark out regular trade routes. One ran from the Elbe basin up the Moldau, then crossed the Böhmer Wald and debouched upon the Danube near Linz. The pedlars forded the river at this point, then traversed Bavaria, and reached Upper Italy by way of the Brenner. Amber was the main commodity carried down this route; the products of the North Italian bronze industry—Italian celts and daggers—being brought back in exchange. A counterpart to this route was that by which the amber was brought to Bohemia. The main line in this direction lay along the Elbe and led to the Danish deposits.<sup>1</sup> It is not unlikely that a second route reached Silesia through the Glatz pass and then tapped the East Prussian deposits by way of Poznań.<sup>2</sup> Finally, Bohemia must have been connected with Hungary or at least Slovakia. This route is not so well marked by depots, perhaps because it passed through a territory occupied exclusively by the Aunjetitz folk. Its existence must be inferred on *a priori* grounds. In the first place Bohemia possessed no appreciable stocks of copper,<sup>3</sup> and the deposits of the Austrian Alps were not yet in full exploitation. It is therefore to be presumed that the necessary metal was brought from the rich lodes of Slovakia or Transylvania. The gold from Aunjetitz graves is thought by Schráníl to be derived from the same quarter, though in view of the local supplies his conclusion seems questionable. In any case, direct relations between Bohemia and Hungary are attested for the transitional period and the epoch of the proto-Aunjetitz culture. In the Aunjetitz period itself the parallelism between Bohemian and Tószeg pottery and the frequent occurrence of Hungarian types—notably the gold 'ear-rings' of type A<sub>1</sub>—in Bohemia bear witness to the maintenance of such relations. More tangible evidence is furnished by the hoards of Stomfa<sup>4</sup> in County Pressburg, Ung. Altenburg in County Mosony (right on the Austrian border), and Stollhof in Lower Austria. The torques, A<sub>1</sub>, of which the depot of Ung. Altenburg is said to have contained 1,000 specimens,<sup>5</sup> are believed to represent the ingots of raw metal since they usually consist of almost pure copper.<sup>6</sup>

*The  
amber  
route*

*The  
copper  
route*

<sup>1</sup> Navarro in *Gj.* 1925 (Dec.), pp. 486 f.

<sup>2</sup> Kostrzewski's map in *Przeg A.* ii, pl. vi, shows two series of Early Bronze Age deposits converging upon the mouth of the Vistula. The one traverses Poznań and Silesia, the other

runs across Pomerania and Brandenburg towards Saxo-Thuringia.

<sup>3</sup> Pace Birkner *MAGW.* lvii, p. (157).

<sup>4</sup> *AE.* xix, p. 233, pl. iii.

<sup>5</sup> *ZfE.* 1896, p. 72.

<sup>6</sup> Schráníl, *Böhmen*, p. 111.

Along all these routes arose secondary centres of industry closely allied to the Aunjetitz culture, and in part either colonies from Bohemia or parallel developments of the proto-Aunjetitz group. It is convenient to deal first with the West Hungarian group.

*Veselé type sites* *Veselé and Gáta Types.* In Eastern Moravia and at some Lower Austrian sites we can recognize ceramic types that recur in a purer form in Western Slovakia. The principal sites are Veselé (near Piestany) and Maly Varad,<sup>1</sup> but the same types are found far up the Waag valley in County Trencsen.<sup>2</sup>

*Veselé pottery* From bell-shaped pits laid bare in a brick-works at Veselé (Fig. 140) come, besides the common cylindrical mug on three feet like Fig. 137 d, many mugs with a band handle extending from the rim of the funnel-shaped neck down to the small globular body (Fig. 141 b), amphorae with cylindrical necks (Fig. 141 f), string-hole vases, and lids in the shape of an inverted cone with a handle on the inside as in the later Vattina form shown in Fig. 161 below. Some of the funnel-necked mugs of this group are decorated with cord-impressions.<sup>3</sup>

Though skeletons whose skulls have been stained green from bronze ear-rings or lock-rings have come to light at Veselé, no graves have been properly excavated, and so no distinctive bronze types can be cited.

The group is connected with the Aunjetitz culture on the strength of the tripod mug and the technique of the pottery. At the same time the cord ornament just mentioned suggests that the late Corded Ware culture represented in Starý Zámek II contributed to its formation.

*Gáta type sites* South of the Danube in North-Western Hungary and the adjacent tracts of Lower Austria south-east of a line running from Bruck to Hainburg,<sup>4</sup> we find a series of cemeteries and settlements of an Aunjetitz character but containing a rather different inventory of ceramic and metal types. The principal sites are the cemeteries of Gáta (now Gattendorf)<sup>5</sup> and Jessehof Puszta<sup>6</sup> on the Austrian border.

*Bronzes* The grave-goods include many 'Aunjetitz' bronzes: flat celts, a triangular dagger (or halberd!) blade, pins of types A1, A3,

<sup>1</sup> *Real.* ii, p. 72; *IIA.* Prague, p. 341. The material is to be seen at Bratislava.

<sup>2</sup> M. Turc. Sv. Martin.

<sup>3</sup> *BRGK.* xvi. 1925-6, p. 18, fig. 10.

<sup>4</sup> *Real.* ii, p. 261; Franz, *BRGK.*, p. 18 and fig. 11.

<sup>5</sup> *AE.* xviii, pp. 146 f.; xix, pp. 47 ff.

<sup>6</sup> Hampel, pl. CLXXXVIII.

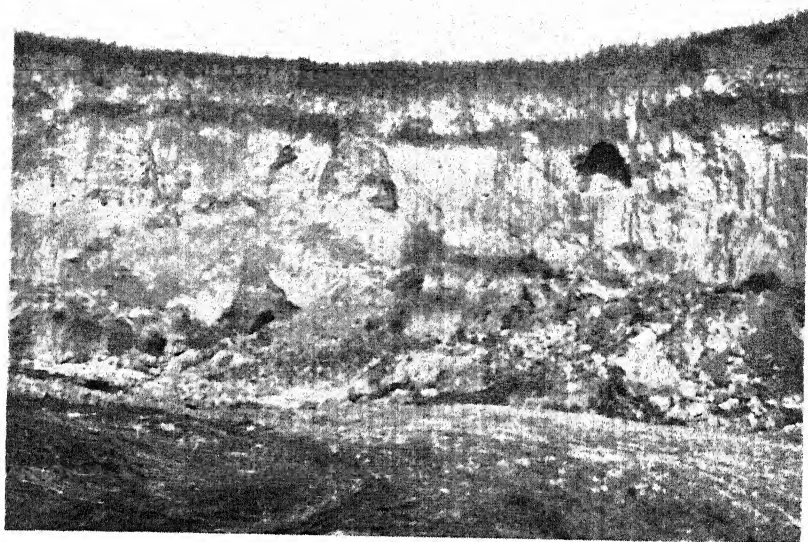


FIG. 140. Veselé, view of site

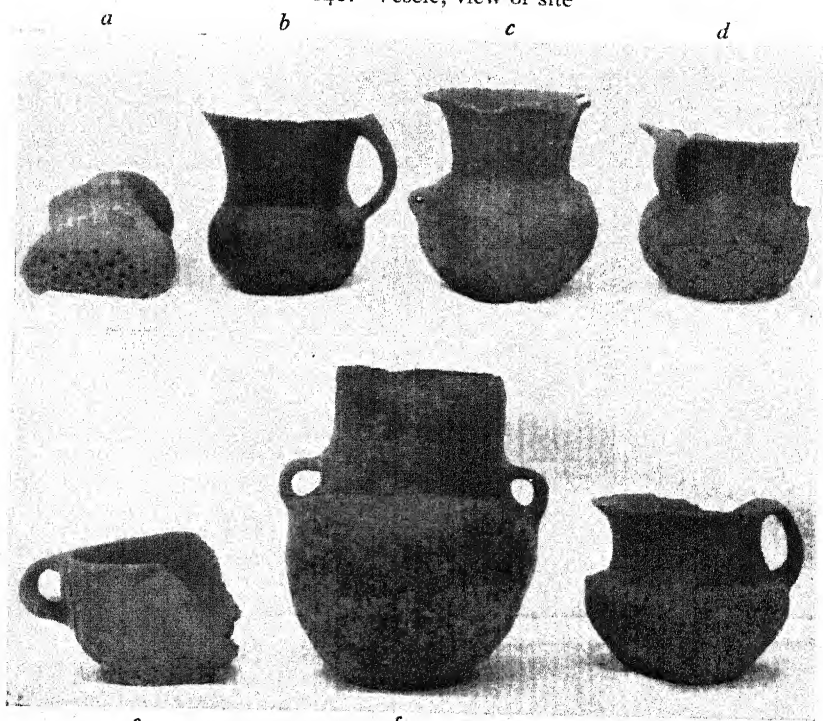


FIG. 141. Veselé vases. Private Collection, Veselé.  $\frac{1}{8}$





A4, and A6 (with plain or decorated heads), ear-rings of type 1, torques of type A1, copper tubes, and simple arm cylinders of plain bronze wire, but no Aunjetitz pins (A2), manchette armlets (A2), nor amber beads.

The pottery agrees in fabric with that of Aunjetitz. The forms differ slightly. In the mugs the handle generally begins below the neck, as in the Aunjetitz form, but is placed rather higher up; the body is well formed, differentiated from the neck by a shoulder groove or even a plastic ridge; it was made, according to von Miské,<sup>1</sup> apart from the neck with the aid of a wooden mould. The other leading type is the hour-glass mug, already mentioned as related to Aegean and Perjámos types.<sup>2</sup> Plastic ridges are sometimes used ornamentally.

Some of the pins<sup>3</sup> may be derived from Bohemia, but that in no wise means that the whole culture is merely an emanation from Aunjetitz. On the contrary, it is a parallel off-shoot from the same southern stem, and one which reveals the original southern inspiration more pure than its more northerly brother. The Aunjetitz forms would have reached it quite naturally in the course of trade, for the routes to the copper lodes would pass across its area.

In the area traversed by the amber route on the Upper Danube a culture arose very similar in its content to the classical Aunjetitz culture east of the Böhmer Wald. Its centre lay on the Upper Danube plain round Straubing and Regensburg, but outposts perhaps reached as far as Upper Bavaria and Cannstatt on the Neckar.<sup>4</sup>

It is likewise represented by cemeteries containing contracted skeletons of which that at Straubing<sup>5</sup> on the Danube is the most important. At Kelheim, however, two cases of cremation and a pithos grave containing a child's skeleton have been reported.<sup>6</sup> These graves on the Upper Danube agree very closely in the metal furniture with the Bohemian; they contain not only triangular daggers, awls with bone handles, amber beads, and torques of type A1, but (rarely) even the characteristic Aunjetitz

Pottery

Straubing group

Burials

Cremation

Bronzes

<sup>1</sup> *AfA.* xv, p. 265. The Gáta cup is found occasionally in Aunjetitz graves in Moravia, e.g. at Opatovice near Rajhrad, *Pravěk*, 1903, pl. XIII, 7.

<sup>2</sup> p. 217 above. Reinecke first noticed the Aegean origin of the type, *MAGW.* xxxii, p. 126.

<sup>3</sup> Pin A4, however, may be connected with the Syrian eyelet pins with a bulb

head shown in *Syria*, 1925, or *LAAA.* vi, pl. XXI. Apart from the pins no Gáta types are peculiar to Aunjetitz to the exclusion of the 'southern prototypes'.

<sup>4</sup> Behrens, p. 64, no. 9; *MAGW.* liv, pp. 111 f.; Kraft, *Bronzeszeit*, p. 17.

<sup>5</sup> Behrens, pp. 65 f. and pls. v and vi.

<sup>6</sup> *Ibid.*, p. 65, no. 12.

pin A2. Pins of type A6 with unornamented heads were, however, far commoner. Distinctive of the group are further helical wire cones of astounding workmanship (Plate 14, A1), parallels to which are, however, known in Lower Austria.<sup>1</sup> They seemed to have formed the model for the Middle Bronze Age spiked tutulus and so may have been worn on the girdle. Twenty 'ivory' disks, 3 cm. diameter and ornamented with engraved circles, are said to have been found in grave 4 at Straubing.

*Pottery* The pottery from these graves again differs from the standard Aunjetitz ware in preserving the pouched form of the

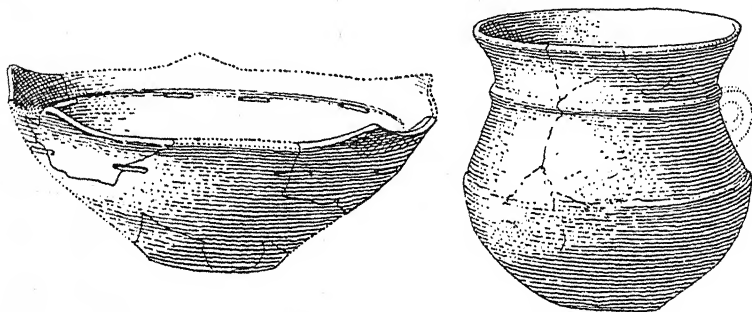


FIG. 142. Dish from Straubing, after Behrens.  $\frac{1}{4}$

jugs as against the Bohemian-Silesian keeled variant, while some examples come very near to Gáta types.<sup>2</sup> The dishes, too, have rims turned up into five peaks (Fig 142), whereas farther east the points are four in number and lie horizontally. Sometimes these bowls exhibit a series of horizontal slits under the rim.<sup>3</sup> Incised ornament, as in the proto-Aunjetitz pottery, is not unknown, and decorative plastic ridges occur. This group may be regarded as a series of trading outposts, planted from Bohemia at the end of the proto-Aunjetitz phase, but the possibility of direct affiliation with cultures flourishing lower down the Danube (Gáta) must be kept in mind.<sup>4</sup>

*Silesian-Polish group* As the proto-Aunjetitz culture was common to Silesia and Bohemia it is natural that close connexion should subsist be-

<sup>1</sup> In the MBA. depot found near Stockerau, unpublished, in Naturhist. Museum, Vienna. The remarkable technique which they illustrate had been evolved in Mesopotamia during the fourth millennium, as marvellous

gold helices from Ur show.

<sup>2</sup> e.g. Behrens, pl. v, 20.

<sup>3</sup> Behrens, pl. v, 22.

<sup>4</sup> The graves or settlement at Mautausen in Upper Austria would provide a link (Theuer, pl. III, 1).

tween the two regions in the subsequent phase. In fact in their furniture the Silesian and Bohemian graves of Period IV correspond exactly.<sup>1</sup> The majority of the Silesian cemeteries lie between the Glatz Pass and Breslau, with outposts on the Upper Oder and round Glogau. Thence they are strung out across Poznania in the direction of the Vistula elbow at Torún. The Aunjetitz pin A2 is not met in graves north of the Wartha, but pin A4 and manchette armlets occur beyond that river.<sup>2</sup> It is to be noted that some of the people interred in these graves were so small (under 5 feet high) that Seger<sup>3</sup> described them as 'pigmies'.

The true Aunjetitz graves from Saxo-Thuringia, most of which lie along the Saale valley,<sup>4</sup> are explicable in the same way through a colonization from the south-east along the amber trade route.

The relative dating of the Aunjetitz and allied cultures is not to-day so simple as it appeared some time ago. It was thought by Montelius, Kossinna,<sup>5</sup> and most other authorities that the Aunjetitz graves all belonged exclusively to the Early Bronze Age, and Seger<sup>6</sup> supports the same doctrine to-day. That view is, however, not easy to maintain, at least for Bohemia, Moravia, and Lower Austria. In the areas of the thickest Aunjetitz settlements Middle Bronze Age cemeteries and villages are totally lacking in Bohemia and are rare in Silesia, Moravia, and Lower Austria, a fact which suggests a survival of the Aunjetitz culture into the later period.<sup>7</sup> Such an inference is supported by the sporadic occurrence in Aunjetitz graves of types characteristic of the Middle Bronze Age, e.g. pins A6 decorated, C3, bilobate pins, and even isolated Late Bronze Age types—such as vase-headed pins. The recently discovered fibulae, too, point to an approximation in date between the late Aunjetitz culture and the Late Bronze Age of the Tyrol. Confirmation of these doubts is provided by the cemetery of Gemeinlebarn in Lower Austria. The unpublished pottery from this site, exhibited at Vienna, illustrates a continuous evolution from inhumation graves with a typically

*Saxo-Thuringian group*

*Chronology*

<sup>1</sup> *SV*, ii, pp. 17 ff.; iv, pp. 3 ff.; *Real*, i, pl. 51.

<sup>2</sup> Cf. von Richthofen's map facing p. 12, and *Przeg A.* ii, pl. vi and pp. 188 f.

<sup>3</sup> *SV*, ii, p. 18.

<sup>4</sup> Limited on the north by a line from Brunswick to Magdeburg, and south-west by Mulhausen and Weimar,

*VAT.*, p. xxix; cf. list in *JST*, vi, p. 30.

<sup>5</sup> *Mannus*, iii, p. 316.

<sup>6</sup> *Real*, i, p. 270, § 24.

<sup>7</sup> Kraft (p. 83) has in fact admitted that the mature Aunjetitz culture overlaps with the beginning of his phase B. Cf. Schráníl, *Böhmen*, p. 146.

Aunjetitz furniture to cremation graves; in the latter Late Bronze objects such as two-membered fibulae with leaf-shaped bow, round backed knives of types 2 and 4, and massive twisted rings already occur. The only conclusion is that the Aunjetitz culture in Lower Austria lasted, virtually unchanged, throughout the earlier phase of the Middle Bronze Age to pass over gradually into the Urnfield culture. As a matter of fact the general trend of thought is towards this heresy. We believe that the Aunjetitz culture covers phases A and B of the Bronze Age.

*Absolute chronology* The absolute chronology is perhaps less debatable. The classical dates proposed by Montelius, accepted by Dechelette, Hubert, Kossinna, and Seger, and even raised by Hubert Schmidt, are still unsupported by solid facts. The occurrence of ingot torques of Aunjetitz or proto-Aunjetitz form in a hoard of thirteenth dynasty date at Byblos gives one fixed point, provided an approximate synchronism between the first use of the type in Central Europe and in Asia Minor be admitted. Another indisputable date is given by the model of a Vapheio cup from a grave at Nienhagen.<sup>1</sup> These fixed points represent an upper limit of 1900 B.C. and a lower limit of 1450 B.C. Perhaps the balance of probability favours putting the beginning of the Aunjetitz culture near the upper date.

*Summary* The Aunjetitz culture and its outposts introduce us for the first time to a society in which manufacture and trade indisputably play a regular role on a par with primary industry. That implies a degree of industrial specialization: there must have been miners and smiths as well as traders. On the other hand, there are no obvious indications of a sharp social stratification nor of a specialized class of warriors. At the same time the number of hoards implies that travel was hazardous. The wealth of ornaments in women's graves shows that the females enjoyed a relatively high status.

Apart from the well-furnished and strictly orientated graves the religion of these folk is a sealed book. Nevertheless, disk-headed pins of type A6, engraved with a cruciform pattern, may be related to a cult of the sun. Neither in pottery nor metal work did the Aunjetitz folk achieve much in the way of art. The patterns, though finely engraved, are essentially rectilinear—principally triangles (Figs. 132, 134).

The bronze worker displayed both skill and originality. He could use a closed mould, sometimes made in several pieces

<sup>1</sup> *Real.* i, pl. 53 a; Evans, *Palace*, ii, p. 175.

and very neatly fitted together, and perhaps was already acquainted with the *cire perdue* process. He could also rivet pieces of bronze together. In the use of the hammer he had made less progress. If the prototypes of many of his products had been supplied by the south, he developed them in a quite original manner. His production as a whole is thoroughly native. The safety-pin might even have been his invention, though its value was not fully appreciated locally.<sup>1</sup>

The distinctive tools are flat or flanged celts, and chisels and awls with bone handles.

The sole weapon was the dagger which could also serve as a knife.

The Aunjetitz culture is essentially the continuation of the proto-Aunjetitz, as its general habit, its burial rites, tools, ornaments, and, above all, its pottery indicate unambiguously. The vital difference between the two is the freer use of metal in the former, which possessed a school of metallurgists producing for the local market. What are the roots of this metallurgical industry?

*Origin:  
Metal-  
lurgy*

The exploitation of metal ores presupposes a considerable knowledge of the property of minerals, that could only be acquired by practical experience. The mining or washing for tin ores, upon which the Aunjetitz culture was most immediately based, must have been initiated by visitors or explorers trained in the necessary processes where metallurgy and mining had long flourished. But we have been finding on every page of the last two chapters vestiges of connexion with, and inspiration from, one such centre in Anatolia, and we know to-day that the Mesopotamians of the fourth millennium were already acquainted with the value of tin. We saw, in fact, that the proto-Aunjetitz culture from which the Bronze Age civilization sprang was absolutely saturated with such Anatolian influence. In the Aunjetitz bronzes themselves we find many types of Troadic or Asiatic origin. In addition to the ear-rings and knot-headed pins, traceable already in the preceding epoch, we can now cite the shield ornaments<sup>2</sup> and the racquet pin A5; the latter was used in Mesopotamia as a hair-ornament in the fourth millennium.<sup>3</sup>

*Links  
with  
Asia  
Minor*

What is still more striking is that a Syrian type of torque, which perhaps was already so used in its homeland,<sup>4</sup> should

<sup>1</sup> Cf. p. 254 below.

<sup>2</sup> With fig. 132 cf. *SS.*, no. 5878.

<sup>3</sup> Childe, *Most Ancient East*, fig. 82.

<sup>4</sup> In view of the large numbers in the Byblos hoard; unfortunately they have not been weighed.



have been adopted by the Central European metallurgists as a unit of the raw metal. It is equally important that one of the distinctive tools of the Aunjetitz metal-workers, the grooved stone hammer, is also found in such early mines in Armenia and Sinai as have been explored.<sup>1</sup>

We may also recall the pithos burials and the trinity of feet, distinctive of Aunjetitz pottery, as Troadic features. Then, in the light of all this, we remember among the earliest dated implements of *rich* bronze the celts from Priam's Treasure in Troy II, 3. The conclusion is that the Aunjetitz school of metallurgy would have been founded by immigrants from that quarter. But the traces of Trojan or Anatolian influence for the most part go back to Period III, as do the roots of the Aunjetitz culture. The maturity of that culture seems to fall in an epoch when trade with Troy was languishing or non-existent. In other words, the rise of a local bronze industry in Central Europe seems to coincide with the cessation of exports to Troy, probably owing to the fall of that city;<sup>2</sup> deprived of their former market, the immigrant metal-workers in Central Europe began producing for home consumption. So the rise of the Aunjetitz culture would be a reflex of the fall of Troy II.

In any case we seek the prime motive force in Bohemian metallurgy in the presence of a very few foreign craftsmen hailing from the south-east.

*West con-* But there were other prospectors in Central Europe—the  
*nexions* Bell-beaker folk from the west. And Schuchhardt and Schmidt assign a great role to Spain in the development of Central  
*Spanish* European metallurgy. There are certainly many points of  
*parallels* agreement between the Aunjetitz culture and western complexes. The daggers and celts can be paralleled at El Argar, and even a halberd of Almerian type is reported from an Aunjetitz grave in Lower Austria. The characteristic implement

<sup>1</sup> Chantre, *Caucase*, i, p. 50; Petrie, *Explorations in Sinai*, p. 50, fig. 56; Schliemann, *Ilios*, fig. 631. Frankfort, *Studies*, ii, pp. 148 f., has postulated a Caucasian centre of metallurgy from which the torques, the racquet pins, the ear-rings with flattened ends, and other elements here disclosed would have been diffused on the one hand to Mesopotamia, Syria, and Anatolia, on the other to the Danube basin. This attractive explanation of the earlier class of parallels between the Caucasus and Central Europe can only be re-

garded with scepticism so long as the evidence for early civilization in the former region is so thin. But we have already admitted an impulse from the east as one factor in the rise of the Hungarian Copper Age civilization.

<sup>2</sup> Had the Aunjetitz culture and the Danube trade existed during the life of Troy II, we should certainly expect to find Aunjetitz types and amber there, whereas the only objects of distinctively European affinities, the axe mentioned above and the bronze celts, would be more in place in Period III.

of the smith, the grooved hammer stone, is found in prehistoric mines in Spain and Britain,<sup>1</sup> but of course the type occurs also in the Ancient East as noted above. Seger<sup>2</sup> has drawn attention to a pair of copper bulls from a depot of this period found at Bithyn in Poznanja which may be matched in Brittany.<sup>3</sup> But again the type is probably oriental in origin. We know that people brandishing the typically 'Iberic' halberd crossed the Ligurian Alps. Finally, the Aunjetitz pottery is often startlingly like that from the graves of El Argar.<sup>4</sup>

These coincidences are certainly puzzling. Perhaps, however, they are sufficiently explained by the common Asiatic origin of metallurgy in Western and Central Europe and the presence of the Beaker-folk in both areas.<sup>5</sup> Nevertheless, the influence of the latter side by side with our hypothetical south-eastern prospectors must have been substantial.

Finally, Upper Italy undoubtedly exercised an influence on the evolution of the Aunjetitz culture. The characteristic round-heeled dagger was possibly developed there out of the Early Minoan forms that appear in the graves of Remedello, and the same centre can put in a claim with Troy, Spain, and Central Europe to the first invention of the flanged celt. Both these types appear in Italy in the 'Periodo eneolitico'. It is practically certain that the bronze-hilted dagger, as well as certain types of pin (trilobate, &c.) and the celt with an indented butt, is Italian in origin. *Italian influence*

This Italian influence was no doubt due to trade. The land amber trade route terminated at the head of the Adriatic, and Upper Italy thus became the intermediary between Central Europe and Pylos, Mycenae and Knossos. As the interchange of goods between Italy and the north apparently became regularly established during the Bell-beaker phase, it is not easy to decide which area had the priority in some of the earlier innovations. But it may be safely asserted that the convergence in Bohemia of this current of intercourse with the south-west and that from Hungary gave the Aunjetitz culture its dominating position in the Early Bronze Age.

<sup>1</sup> Evans, *Stone Implements*, p. 234.

<sup>2</sup> *Real.* i, p. 270.

<sup>3</sup> Déchelette, ii, fig. 198.

<sup>4</sup> Siret, *Questions*, p. 156. The Spanish wares are even mottled like the Bohe-

mian, but the omphalos base and the handles of the latter are never found.

<sup>5</sup> The first round-heeled daggers go back to the Bell-beaker epoch in Bohemia.

## II. THE SAXO-THURINGIAN BRONZE CULTURE

We have seen above that the Aunjetitz culture is represented by a series of typical graves in Saxo-Thuringia. But the Early Bronze Age in this area has a character of its own, revealed by peculiar weapons and burial rites existing side by side with the ordinary Aunjetitz forms and customs.

*Royal tombs* Besides flat graves (and pithos burials) a number of barrows in this area belong to the period with which we are dealing. The great tumulus near Leubingen<sup>1</sup> covered a gabled mortuary-house. The floor, paved with stone flags on a mound of earth, measured  $3.9 \times 2.1$  m<sup>2</sup>. The side walls of oak beams, overlaid with thatch, sloped up to a rafter supported at one end on an oak trunk.

In the chamber an old man lay extended, and across his body rested the corpse of a young girl. The grave-goods were: a halberd blade engraved with lines parallel to the edges, like Fig. 143, a triangular dagger blade similarly decorated, two flanged celts of type A2, a flat chisel with rudimentary lugs at the side,<sup>2</sup> a perforated axe of serpentine 30 cm. long and resembling a late Danubian 'plough-share' in outline, a cylindrical bracelet of massive gold adorned with ornamental ribs on the outside (Pl. 8, A3), gold pins including type A2, and gold ear-rings or lock-rings of type D4, and a large jar.

A barrow near Helmsdorf<sup>3</sup> was only slightly less rich. The chamber was a large stone cist probably roofed with wood. It contained a triangular dagger, a celt stated to be of English manufacture,<sup>4</sup> a simple diorite axe-hammer, gold bracelets and pins, one of type A2. A small cist near the periphery of the barrow contained a contracted skeleton with a very late corded beaker.

Besides these royal graves Early Bronze Age interments are found, often with 'neolithic' burials, in many barrows, e.g. the Baalberg<sup>5</sup> near Bernburg, Dorndorf,<sup>6</sup> Gosek,<sup>7</sup> Kötzschen (Merseburg).<sup>8</sup>

These barrows introduce us to a series of forms strange to Bohemia. The hoards between the Saale and the Elbe supplement the information given by the burials, revealing, as dis-

<sup>1</sup> *JST.* v, pp. 1-59.

<sup>2</sup> With this cf. the chisel from Kuttlaue in Silesia, *Götze-Fest.*, p. 85, fig. 3.

<sup>3</sup> *JST.* vi.

<sup>4</sup> *l.c.*, p. 55. This opinion is based both on the form and on the excep-

tionally low nickel content in the implement.

<sup>5</sup> *JST.* i, pl. III.

<sup>6</sup> *Ibid.*, pl. XII. i.

<sup>7</sup> *Ibid.*, p. 67.

<sup>8</sup> *VAT.*, p. 13.

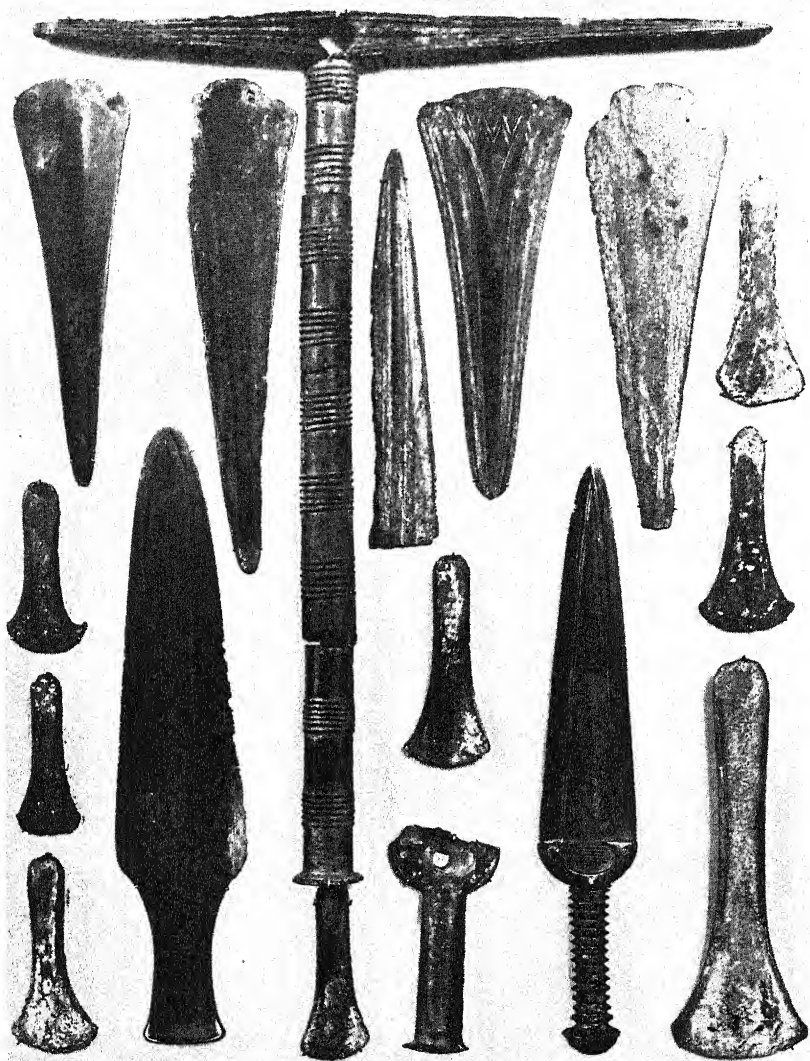


FIG. 143. Hoard of Neuenheiligen, British Museum.  $\frac{1}{4}$



tinctive of the Saxo-Thuringian culture, the halberd, a sort of shaft-hole axe, and certain varieties of dagger.

The simplest halberd form, met at Leubingen and in the hoard of Neuenheiligen (Fig. 143), is attached directly to the wooden shaft by rivets; <sup>1</sup> the blade was asymmetrical but might be adorned with triangles in the Italian style. An improvement was to cover the shaft-head with a bronze cowl that prevented the wood splitting. The shaft might be cased in a bronze tube. Eventually the cowl and blade came to be cast in one piece.<sup>2</sup>

*Halberds*

With the halberds at Neuenheiligen was found the curious shaft-hole axe shown at the top of Fig. 143.<sup>3</sup> The blades are extremely narrow; still the implement must rank as a battle-axe (unless it be a unit of currency). Such axes were cast without the aid of a wax model in moulds made in four parts.<sup>4</sup>

*'Double axes'*

The Saxo-Thuringian industry further produced flat tanged daggers reminiscent of the copper age (Fig. 143, left on bottom), and bronze-hilted daggers imitating the Italian form but with the hilt cast in one piece with the blade.<sup>5</sup> The dagger from Neuenheiligen with ridged hilt is perhaps a local product,<sup>6</sup> though there are parallels in Italy.<sup>7</sup> In the latter the hilt consisted of alternate rings of bronze and bone, ivory, or amber.

*Local daggers*

The products of the Saxo-Thuringian industry are distributed all over Northern Europe. Bronze-shafted halberds were exported to Scandinavia, Lithuania, and Poland. There are isolated specimens from Slovakia<sup>8</sup> and Bavaria.<sup>9</sup> Shaft-hole 'axes', like Fig. 143, are found in Silesia and Poznań.<sup>10</sup> It is evident that Saxo-Thuringia was a great centre of trade. Routes to the east and west (*vide* the 'English' celt) here crossed the Elbe amber route. The hold on the latter is demonstrated by the amber beads in the hoard of Dieskau near Halle. At the same time the Saale valley is rich in salt,

*Trade*

<sup>1</sup> At Leubingen huge bell-shaped rivets were used.

<sup>2</sup> Schmidt, *PZ.* i, p. 116; Seger in *Götze-Fest.*, p. 88.

<sup>3</sup> Klemm thought the bronze tube belonged to it, not to one of the halberds; *Handbuch der germ. Altertums-kunde* (1836), p. 209.

<sup>4</sup> Götze, *Real.* ii, p. 152 and pl. 75 e. Five specimens are known from Saxo-Thuringia and one from Brunswick (*JST.* iv, p. 7, and *ZfE.* 1902, p. 194) A similarly shaped implement has been found in Bohemia, but in it the

ribs are on the vertical faces.

<sup>5</sup> *ZfE.* 1893, p. (412); cf. *Mannus*, xviii, p. 360.

<sup>6</sup> A rather similar dagger comes from the Baalberg barrow, *JST.* i, pl. III; cf. *Mannus*, xviii, p. 359 (Falkenwalde, Uckermark).

<sup>7</sup> Montelius, *Chron.*, fig. 310; cf. *MAGZ.* ii, pl. II.

<sup>8</sup> *ZfE.* 1896, p. 70.

<sup>9</sup> Behrens, pl. IV, 12, and p. 71.

<sup>10</sup> Karschau, Nimpsch; Montelius, *Chron.*, fig. 83 (Nackel, Poznań).



and there are copper deposits near Halle.<sup>1</sup> This commercial importance is reflected in the exceptional wealth of gold in the graves, and still more conspicuously by the remarkable hoard of gold celts and ornaments found at Merseburg.<sup>2</sup>

*Summary* The Saxo-Thuringian Bronze Age civilization has a different aspect from that of Bohemia. Industry and commerce indeed form its economic basis. But war is an absorbing interest.

The royal tombs, under huge barrows, indicate powerful chieftains among the merchants. For them at least a barrow was erected. Traces of human sacrifice are associated with the burials of chiefs. The jewellery discloses a certain aesthetic sense as does the rich ornamentation of the weapons.

The tools conform on the whole to Aunjetitz types, but the halberd and the 'double-axe' are added to the armament. The Leubingen grave discloses a curious type of rectangular house-construction.

In explaining these differences we must again distinguish between the industry and its users.

*Origin* The general war-like character of the culture (especially the use of the battle-axe), and also the burial rite of the chiefs, point unmistakably to a survival of the Corded Ware folk.<sup>3</sup> These presumably constituted a military aristocracy among the Aunjetitz people, who were buried in simple flat graves.

*English connections* The peculiarities of the industry are explicable in terms of the special commercial relations of its area. The Central German halberds find their closest parallels in Ireland<sup>4</sup> rather than in Spain or Italy. The flat-tanged dagger from Neuenheiligen may likewise be inspired by British models<sup>5</sup> if not descended directly from the local Bell-beaker weapons. So, too, the shaft-hole double-axes are to be connected with the symbolic copper axes brought from the Atlantic across France.<sup>6</sup> Thus the original southern stimulus which produced the Aunjetitz culture was blended in Saxo-Thuringia with inspirations radiating from Britain and the west. The conjunction of the two currents in a well-organized but warlike and vigorous society gave to the Saxo-Thuringian bronze culture its peculiar vigour and originality.

<sup>1</sup> These are so inaccessible and hard to work that they can scarcely have been exploited in antiquity.

<sup>2</sup> *VAT.*, p. 15 and figs. 162 and 189.

<sup>3</sup> Note that the Bronze Age graves frequently lie in barrows built by the Corded Ware folk in 'neolithic' times.

<sup>4</sup> Cf. e.g. Coffey, *Bronze Age*, fig. 10. The implement from San Fiacre,

Morbihan, figured by Dechelette (ii, p. 198) as a halberd, looks even more like our specimens; but an examination of the original in the Ashmolean discloses that it was not hafted as a halberd.

<sup>5</sup> As *Archaeologia*, xliii, pl. xxxii, 1; cf. *Götze-Fest.*, p. 94.

<sup>6</sup> Vide p. 193 above.

## III. THE ADLERBERG CULTURE

In the Rhine valley a bronze industry arose contemporary with Aunjetitz and partly on the same foundation. A round-heeled dagger of Italian type was already found in this area with a zoned beaker, in the neighbourhood of Bingen.<sup>1</sup> At a rather later stage, certainly after the Beaker folk had left for England, a regular series of small cemeteries on both sides of the river bears witness to the existence of a local bronze industry. The most important is that on the Adlerberg, near Worms, where the graves were adjacent to pit-dwellings of the usual type.<sup>2</sup> The graves were usually simple trenches containing contracted skeletons. These belonged to tall individuals, nearly six feet high, but brachy- or mesaticephalic.<sup>3</sup> The grave-goods were poor. Bronze<sup>4</sup> was represented only by triangular daggers, awls, wire rings, and pins with flattened head bent over in a roll (C1)—a type characteristic of the Early Bronze Age on the Rhine. Flint knives and arrow-heads were still common. Rings of ivory and Mediterranean shells (*Columbella rustica*)<sup>5</sup> disclose connexions with the south. The pottery was rough and unornamented. The leading forms were a squat cup with ribbon handle on the shoulder and round-bottomed bowls.<sup>6</sup> Other graves of the same epoch introduce us to cups and pyxides with survivals of Bell-beaker ornament (triangles), but no new bronze types.<sup>7</sup> Only the use of barrows of rubble to mark the graves at Monsheim<sup>8</sup> needs mention as foreshadowing the general rite of the succeeding period.

The Adlerberg culture is patently a descendant of that of the Zoned-beaker folk of the preceding epoch. Schumacher<sup>9</sup> considers that contact with the Mediterranean was secured by way of the Rhône, citing the graves from Savoy and the Jura which Piroutet<sup>10</sup> regards as inspired by the Aunjetitz culture. The western trade route, marked by the copper double-axes, may also have played its part.<sup>11</sup> Evidence of contact with Central Europe at a rather later date is supplied by depots from the Mainz basin. One or more unearched at Dexheim contained ingot torques A1, and pins like A5 and A6. A gold Aunjetitz pin, A2, was dredged out of the Rhine. So, in a

<sup>1</sup> Behrens, no. 83, p. 80, and fig. 21.

<sup>2</sup> *Ibid.*, p. 75.

<sup>3</sup> *PZ.* iv, p. 58 (Schlitz).

<sup>4</sup> I know of no analyses to prove the presence of tin.

<sup>5</sup> *BRGK.* x, p. 21.

<sup>6</sup> *AuhV.* v, pl. 2.

<sup>7</sup> Behrens, figs. 18 and 20.

<sup>8</sup> *Ibid.*, p. 78, no. 71. So also in Alsace (Schaeffer, p. 152), and on the Lower Rhine.

<sup>9</sup> *BRGK.* x, p. 22.

<sup>10</sup> *L'Anthr.* xxviii (1917), p. 67.

<sup>11</sup> *Supra*, p. 193.

barrow near Haguenau, a torque of type A1 was associated with other Danubian types of the Early Bronze Age.

This poor industry forms the background for the tumulus culture which blossomed exuberantly in the Middle Bronze Age. It is misleading to speak of an Adlerberg phase as anterior to Aunjetitz or Straubing. The poverty of the culture indicates only that the Rhine valley was at the moment culturally a backwater.

## APPENDIX TO CHAPTER XII

### *Note on the Divisions of the Bronze Age*

It is implied in the very definition of the Bronze Age that it was a period when exchange and trade were conducted regularly over wide areas; the manufacture of bronze itself presupposes constant intercourse between areas producing tin (Bohemia or Britain) and those where copper was available (in our case Slovakia, Transylvania, the Austrian Alps, or Yugo-Slavia). The general use of metal was only rendered possible with the establishment of a system of distribution and communication supplying the areas where bronze was used. The general commercial interconnexion which was thus the precondition of the existence of a Bronze Age is reflected in the wide distribution of various types and implements. A study of implements, weapons, and ornaments accordingly renders possible a chronological correlation of the several interconnected areas.

*Typologies*

Fashions in tools and ornaments changed; improvements were made which were diffused, more or less rapidly, over the whole area covered by the continental economic system. In some cases at least the changes and modifications in the form of the objects proceed in a logical order. By correlating the several stages in the evolution of celts, daggers and swords, knives, pins, &c., by a comparison of 'closed finds'<sup>1</sup>—hoards or, better still, tomb-groups<sup>2</sup>—it is possible to divide the Bronze Age up into several typological phases.

<sup>1</sup> i.e. a group of objects deposited together at one time and presumably in use simultaneously at the time of their deposition.

<sup>2</sup> For chronological purposes the several archaeological deposits may be arranged in the following order of value: (1) grave-finds: the arms and ornaments used by the dead man during his life; (2) trader's hoards: new articles finished or nearly finished, con-

stituting the stock-in-trade of some pedlar. Founder's hoards, including used objects collected to be melted down and recast, and votive deposits—weapons or ornaments cast into a sacred pool or bog or deposited under a sacred stone or at the roots of a holy tree—are almost useless, for the contemporary use of the objects is not guaranteed.

The course of evolution is presumably from crude and simple to more elaborate and satisfactory forms. But no typological series can legitimately be based on this criterion alone. For its validity it is essential that two or more terms shall be fixed in the historical time series by association with datable objects. Again, the typological division rests on the parallel development of several series of objects as revealed by the frequent association of members of the respective series. Finally, the system is only applicable to regions that are demonstrably in constant and regular contact, as evidenced by the frequent appearance in the one area of objects proper to the other and vice versa. It would be thoroughly unsound to attempt to extend the system to areas entirely disconnected or connected only by occasional intercourse.

*Condi-  
tions of  
validity*

A number of systems have been proposed for Central Europe. The oldest is that of Montelius, elaborated primarily for Scandinavia,<sup>1</sup> but extended by many German and Polish archaeologists<sup>2</sup> to the whole of our area. Montelius recognized six phases of the Nordic Bronze Age, termed periods I, II, III, IV, V, and VI, of which the three last overlap with the Early Iron Age of Austria and Italy. Sophus Müller<sup>3</sup> worked out a more elaborate scheme for Denmark. According to him the pure Bronze Age falls into six main phases. Finally, P. Reinecke,<sup>4</sup> basing his conclusions primarily on the South German and Hungarian material, but taking into account also Müller's division of the Danish finds, distinguishes four phases of the Bronze Age, A, B, C, and D, followed by a 'Hallstatt A' phase in which, however, bronze was still generally used north of the Alps.

*Various  
systems*

We shall in general follow Reinecke's terminology, but for convenience bracket B and C together as Middle Bronze Age, and D with Hallstatt A as Late Bronze Age (Period VI). An approximate correlation of the several systems is given in the following table:

<i>Danubian periods.</i>	<i>Montelius.</i>	<i>S. Müller.</i>	<i>Reinecke.</i>	
IV	I	I	{ A B }	Early Bronze Age
V	II	{ 2-3 4 }	{ C <sub>1</sub> C <sub>2</sub> }	Middle „ „
VI	III IV	5-6 7-8	{ D HA (E) }	Late „ „

<sup>1</sup> *Om Tidesbestimning inom Bronzeålder.*

hhardt and Splieth.

<sup>3</sup> *MSAN.* 1908.

<sup>2</sup> *ZfE.* 1902, Kossinna, Kostrzewski, Schumacher, *BRGK.* x (1917), Schuc-

<sup>4</sup> *AuhV.* v, *passim*; *Götze-Fest.*, pp. 131-2.

The various types of bronze objects are of unequal value for a general chronology. Ornaments reflect definitely local taste and frequently differ widely from place to place. In given areas the pins and bracelets may evolve in a regular manner and so furnish valuable data for local chronology. But the restricted range of such objects and their personal character unfits them to serve as a general framework. They are only valuable as checks.

Tools and weapons are in a different category. Improvements in these were so vitally important to the life of the communities that they would fairly soon be generally adopted. In the case of swords and daggers in particular the several types have a relatively uniform distribution over the various areas comprised within the Central European economic system.

*Daggers*

In the Early Bronze Age only the triangular round-heeled dagger was in use in the area of Aunjetitz culture and its congeners. In hoards of the later phase of this culture, perhaps already phase B of the Bronze Age,<sup>1</sup> bronze-hilted daggers appear as imports from Italy or, as Kraft<sup>2</sup> suggests, from western Switzerland, and these are imitated locally, the hilt and blade being cast in one piece with ornamental imitations of rivets (A<sub>3</sub>). A specialized variant of this type characterizes the Tumulus Bronze culture of South Germany in Period V (A<sub>5</sub>) (Plate 1).

*Ogival daggers*

In the area of the Tumulus Bronze culture we find by Period V (phase B) an ogival knife-dagger, probably not derived from series A, but quite possibly going back to the rhomboid copper daggers found in the East Alpine lake-dwellings.<sup>3</sup> The bronze specimens of this series have broad butts carrying four or six large rivets (type B<sub>1</sub>) in phase B, while later the butt tends to become narrower and the number of rivets is reduced to two (types B<sub>2</sub> and B<sub>3</sub>).

*Short swords*

In Period V (phase B) a development in the direction of a longer weapon was already beginning. The bronze-hilted dagger, based on Italian models, was elongated, and its blade widened till it formed a short sword, type AA<sub>4</sub> (Fig. 147, 1); stray specimens of this type are known from Denmark, North Germany, Upper Italy, and Hungary.<sup>4</sup> These weapons are still better adapted for stabbing than for slashing, since longi-

<sup>1</sup> In the depot of Falkenwalde, found with celts with rudimentary stop-ridge, *Mannus*, xviii, pp. 359 f.

<sup>2</sup> *AsA.* xxix (1927), p. 10.

<sup>3</sup> But a direct relation to Middle Minoan types, Remouchamps' forms

4-5 (*Oudh. Meded.* 1926, p. 28), is likely.

<sup>4</sup> Naue, *Schwerter*, pl. xix, 3-6; Müller in *MSAN.* 1908, fig. 10; *Man.* xxvi. 84.

tudinal rigidity is secured by a midrib, but the treatment of the blade already anticipates the leaf-shape characteristic of the slashing swords of Period VI. Farther west, a similar development, beginning with the flat round-heeled dagger A<sub>1</sub>, led in France, Switzerland, North Italy, and perhaps West Hungary, to the short sword, A<sub>6</sub>, by Period V (phase B).

Really long weapons, at first adapted primarily for thrusting, were in use from the beginning of phase B. The commonest type is the rapier characteristic of the Tumulus culture of South-West Germany and Bohemia. The earliest forms (A<sub>1</sub>) have broad heels and are provided with six (more rarely, and perhaps later, with four) large rivets for the attachment of a hilt of wood or other perishable material; later the heel is narrowed till by phase D it disappears altogether and the blade ends above in a triangular tang, type A<sub>3</sub>.<sup>1</sup> A contemporary variant has the midrib prolonged into a tang and bent over, much in the style of the far older Cypriote daggers. Most of the early rapiers of series A that have been found in closed deposits come from the barrows of Wurtemberg, Upper Bavaria, and Bohemia. They are quite exceptional on the Rhine and in the north, and are missing altogether in East Germany. On the Middle Danube they are distinctly rare; the only grave-finds in which they occur seem to be those of Zenta and Vattina. Hence, though it would be natural to believe that these rapiers were inspired by Minoan models, a spontaneous growth on the Upper Danube seems more likely unless the prototypes were introduced up the Adriatic and across the Brenner.<sup>2</sup>

A second series is provided with bronze hilts like daggers of type A<sub>2</sub>.<sup>3</sup> These had given rise to short swords of type AA<sub>4</sub> already in phase B, and by phase C we find a weapon with a broad oval hilt in the South German barrows.<sup>4</sup> The grip contracts gradually from the pommel to the guard, and then expands again to form the guards (type B<sub>1</sub> = Naue Aa). A slightly later variant (B<sub>2</sub> = Naue C), well attested for phase C<sub>2</sub> at latest, has a flattened cylindrical grip. Then in phase C<sub>2</sub> the celebrated form with an octagonal grip was evolved, apparently on the Upper Danube, though stray specimens are found both

*Rapiers  
and  
swords  
Series I*

*Series II  
Bronze-  
hilted  
swords*

<sup>1</sup> A well-dated specimen is that from Courtavant, Aube; Dechelette, ii, p. 148; *B.M. Bronze*, fig. 137; cf. *AE.* xix, p. 237; Kraft, *AsA.*, 1927/8, p. 34.

<sup>2</sup> The rapier, 34 cm. long, from an 'Early Helladic' grave in Levkas (Dörpfeld, *Alt-Ithaka*, B. 62, 3), is suggestive.

<sup>3</sup> In discussing the development of this series the native Scandinavian types have been neglected, since they are not only highly specialized, but, to my knowledge, never occur outside the Teutonic province.

<sup>4</sup> Naue, *Schwerter*, pl. XLII, 1-3.



in Denmark and North Hungary.<sup>1</sup> The type outlasts the limits of Period V since some specimens have the swelling grip and leaf-shaped blade distinctive of the Late Bronze Age. But now the facets of the octagon are eliminated and we have a type with pointed oval (B4) or nearly round grip, swelling out towards the centre. The majority of these swords were definitely designed for slashing and, especially in Hungary, have been provided with leaf-shaped blades. The Hungarian form, with ridges on the pommel (B5), belongs to phase E and even Period VII; the Ronzano (B6) and antennae (B7) types represent parallel developments farther west, probably in Switzerland.

III The last series of swords is constituted by those with a wide tang that was plated with wood, bone, or ivory to form the grip. *Tanged swords* Flanges to keep the plates in position border the tang. The rudiments of the device appear on certain swords of type Ao in Western Hungary<sup>2</sup> that may conceivably belong to phase B. But the regular series begins in phase C.<sup>3</sup> *Mycenaean imports* Precisely in the same period we find imported Mycenaean rapiers, our Co, in both South Germany and Scandinavia.<sup>4</sup> The corresponding native type, C1, found both in Bavaria and Slovakia,<sup>5</sup> was a stabbing weapon, the hilt having sloping shoulders as in the contemporary bronze-hilted variant B1. But in Scandinavia and East Germany a variant, C2, already equally adapted for slashing as for thrusting, is assigned to this phase;<sup>6</sup> its shoulders are often more rounded, and at first there are no rivets in the tang; the platings were presumably kept in place by binding thongs. In Period VI weapons of this family were developed into genuine cutting swords, perhaps under the influence of the West Hungarian type Ao, though the actual diffusion of the slashing weapon seems bound up with the spread of the urn-field cultures of Lausitz type.<sup>7</sup>

*Origin of C 2-3* Swords of series C are peculiarly important for their Aegean connexions that make them a serviceable basis for the absolute chronology of the Bronze Age. The type has been studied in detail by Kossinna,<sup>8</sup> Sophus Müller,<sup>9</sup> Naue, Peake,<sup>10</sup> and

<sup>1</sup> Kammerberg (Franconia), Obrnic and Tachlovice (Bohemia), Forró (Abauj); cf. *MSAN.* 1908, fig. 83; Splieth, pl. III, 35, and p. 337 below.

<sup>2</sup> Peake, *Bronze Age*, p. 87, has recognized the high antiquity of the type, and rightly, if rather vaguely, diagnosed its starting-point, but has exaggerated its significance; for the distribution cf. p. 399 below.

<sup>3</sup> For these see p. 327 below.

<sup>4</sup> Hammer, *AuhV.* v, pl. 62, 1132; *MSAN.* 1908, fig. 116; cf. Reinecke's comments in *AuhV.* v, p. 362.

<sup>5</sup> Asenkofen E, Szomolány.

<sup>6</sup> *MSAN.* 1908, p. 57.

<sup>7</sup> Cf. p. 371 below.

<sup>8</sup> *Mannus*, iv, pp. 274 ff.; *DV<sup>2</sup>*, pp. 125 ff.

<sup>9</sup> *MSAN.* l. c.

<sup>10</sup> *Bronze Age*, pp. 88 ff.

Reinecke.<sup>1</sup> The first named argues for a Germanic origin. He makes the absence of rivets from the tang the test of antiquity. On this assumption the oldest type is commonest in the Germanic province; but all that is actually proved is that the swords with rivetless tangs are a local northern variety. The failure of the genuine Germanic swords with inlaid bronze hilts to spread at all outside their native area is really a sufficient answer to Kossinna.<sup>2</sup> *Scandinavia*

Sophus Müller locates the original home in Italy, though admitting that early forms are rarer there than in the north. Peake has concentrated his attention on the form of the shoulder, without entirely proving the vital importance of that section in the evolution. On his theory the earliest type had round shoulders and the sloping shoulders are very late.<sup>3</sup> Reinecke's typology leads to just the opposite conclusion, and we accept it here as being alone supported by any number of closed finds. *Italy or Hungary?*

But we are reluctant to accept his conclusion that the developed types—C<sub>3</sub> and C<sub>4</sub>—are native to the Aegean. No doubt the flanged tang was evolved there since it goes back to Middle Minoan times. It is therefore highly significant that the device was first<sup>4</sup> adopted in North and Central Europe just at the moment when Mycenaean rapiers with flanged tangs actually appear as imports. But we still regard the swords of types C<sub>3</sub> and C<sub>4</sub> as native creations of the smiths of East Central Europe, without attempting to limit more precisely the place of origin. Our absolute chronology is based on the assumption<sup>5</sup> that the form originated in Central Europe even though it continued in use there long after its appearance in the Aegean and its translation there into iron. *Aegean*

The imported Mycenaean rapiers, appearing in closed finds in the latter half of Period V (phase C), belong to the Late *Chronological inferences*

<sup>1</sup> Last in *Götze-Fest.*, pp. 131 f.

<sup>2</sup> The southernmost closed find of Germanic swords known to me is from the barrows near Havermark, *JST.* viii, pp. 135 ff., fig. 22.

<sup>3</sup> The age assigned to his type A = our A<sub>0</sub>, may be accepted, but it is doubtful whether it is in the direct line of descent at all. Our type C<sub>1</sub>, which is certainly very early, comes nearest to Peake's E. The only Hungarian specimen of B cited comes from a hoard dated by a fibula to Period VII.

Most of his specimens of C and D are nearly as late. Clearly Peake's series does not follow a chronological order as required.

<sup>4</sup> Apart from the little 'Ciempozuelos' daggers of Period III, which have no descendants in Period IV.

<sup>5</sup> *WPZ.* xiii, p. 42; cf. Remouchamps, *Oudh. Meded.* 1926, pp. 43 and 67. There is indeed no doubt that swords of this form remained in use long after 1200 B.C.

Mycenaean A period in Greece, *circa* 1350 B.C.: the slashing type C<sub>3</sub>, characterizing continental deposits of our Period VI, appears in Greece about a century later. The border between Periods V and VI must therefore be drawn not much after 1300 B.C.

*Celts* After the swords the celts provide a chronologically useful series, but local divergences are much greater, and in Hungary there was no evolution at all since the shaft-hole axe was in use throughout Period V. Flat celts and flanged celts of types A<sub>1</sub> and A<sub>2</sub> were alone in use during Period IV. In Period V an evolution began along four main lines (Plates 3, 4).

*Winged celt* The builders of the South-West German tumuli were using a very slender variant of the flanged celt (B<sub>1</sub>) by Period V, and then improved upon it by widening the flange to form wings, thus reducing the risk of the axe-head wobbling sideways on the shaft. In phase B-C the wings stand mid-way up the body (type B<sub>2</sub>); they begin to approach the butt in the latter half of Period V (type B<sub>3</sub>), until in Period VI they are raised up to the butt (types B<sub>4</sub> f). The early phase B<sub>2</sub> is best represented in Italy, West Hungary, and Wurtemberg. Type B<sub>3</sub> is common also in the Bohemian tumuli, while the Late Bronze Age types were at home in the whole Alpine area.

*Bohemian palstav* A second series seems to have begun by narrowing the space between the flanges and widening the flanges into wings at the same point. Longitudinal slip as well as side slip was thus diminished. The ultimate result, affected perhaps by series D, was the Bohemian palstav, C<sub>3</sub>. The latter type is characteristic of the Hercynian tumuli, though it was exported to South Russia, North Serbia, and Upper Bavaria. What may rank as intermediate stages, C<sub>1</sub> and C<sub>2</sub>, are represented first in Bohemia<sup>1</sup> and then farther west in Switzerland and Upper Bavaria.<sup>2</sup> They may go back to phase B, while most celts of type C<sub>3</sub> must rather belong to phase C.<sup>3</sup> During Period VI, C<sub>3</sub> was ousted by the socketed celt which, however, in East Central Europe, is often ornamented with a V-pattern reminiscent of the opening of C<sub>3</sub> (type C<sub>4</sub>).

*Palstav* To prevent the axe-head slipping back into the shaft at each blow (longitudinal slip), a stop-ridge was developed between the flanges. Anticipations of this are to be seen in celts from Aunjetitz deposits in Bohemia, and Silesia (type D<sub>1</sub>). Then

<sup>1</sup> Schráníl, *Studie*, fig. 12, 8, with Aunjetitz types.

<sup>2</sup> Reitnau (*AsA.* xvii, p. 93); Asen-

kofen E, Mühlthal, xiv, 3.

<sup>3</sup> With A<sub>2</sub> at Kbely, Hladomeř, and Brunn XI.

in Period V the developed palstav (type D2) was evolved apparently on the Rhine. Lissauer terms it the North Germany type, but the majority of specimens in our area come from the Rhine basin.<sup>1</sup> Farther west Lissauer's West European type was in use; it differs from D2 in that the stop-ridge is curved to accommodate the rounded end of the bent shaft.

In Scandinavia and East Germany a straight-sided flanged celt, E1, was in use at the beginning of Period V. It was often secured to the shaft by binding with bronze wire, and later by a loose bronze collar, type E3. According to Sophus Müller<sup>2</sup> the collar came to be cast in one piece with the blade, and then the suppression of the saeptum produced the earliest socketed celts, E5. The Danish evidence shows that this evolution was completed by phase C. But the intermediate steps are missing in Scandinavia. Sophus Müller would seek them in East Germany, and a possible candidate for the position has, in fact, recently come to light in Silesia, type E4, where the saeptum is certainly still in place, but the band has been triplicated. Dr. Harrison,<sup>3</sup> who has successfully proved that Montelius' typology, deriving the socketed celt from the winged types like B5, is untenable, denies the validity of Sophus Müller's scheme too, and would look for influence from farther east.<sup>4</sup> Be that as it may, it is clear that the socketed type was in regular use in Scandinavia and East Germany before the end of Period V, won general acceptance in Bohemia and North Hungary in Period VI, and was gradually ousting the winged type in the North Alpine area and Italy as iron was coming into regular use.

Socketed spear-heads came into general use early in Period V. Those of this age have a small leaf-shape blade; in Period VI the blade is lanceolate or rhomboid in outline and often ribbed. Prototypes for the socketed spear-head have not yet been identified in Central Europe, so it must be assumed that the type was introduced ready-made at the beginning of Period V. The specimen from Langquaid,<sup>5</sup> being still associated with Aunjetitz types, must stand early in the series, and implies that the model was introduced from the Aegean in connexion with the amber trade. Early examples from the Middle Danube basin may equally well have been inspired by models brought up-stream in return for gold.

<sup>1</sup> *ZfE.* xxxvii (1905), p. 796.

<sup>2</sup> *MSAN.* 1908, p. 28.

<sup>3</sup> *Man.* xxvi, 143.

<sup>4</sup> The technical presupposition of the socketed celt, core-casting, was al-

ready known in Period V, as the presence of socketed spear-heads shows; cf. p. 326 below.

<sup>5</sup> Behrens, p. 13, fig. 4.

*Socketed  
celt*

*Spear-  
heads*

*Razors* The only other implement that shows any sort of orderly development is the razor. Apart from some curious and undatable specimens from Hungary,<sup>1</sup> specialized razors can only be traced in Period VI; previously tweezers had been used for dipilatory purposes. At the very beginning of Period VI, however, we suddenly find a whole crop of double-edged razors in the area of the Hercynian tumuli and a few stragglers on the Rhine. In most of these it is still possible to discern the peculiar indent in the blade that characterized the Italian and Sicilian razors of the fourteenth century; we may therefore conclude that the Hercynian types are inspired in the last resort by Italian models.<sup>2</sup> Actual Italian forms are only found farther to the south-east, such as the undatable example from Pilin. Razors of types A 1-2 were characteristic of the first half of Period VI (Reinecke's phase D). In the subsequent phase, Reinecke's Hallstatt A, the well-known penannular type A4 was evolved, apparently in the Swiss lake-dwellings. Then stray single-bladed razors of Benacci II form herald the beginning of Period VII (Plate 5).

*Fibulae* In addition to tools and weapons the fibulae provide a useful guide to the division of the later phases of the bronze age.

*Series A* The earliest safety-pins of a very simple violin-bow form appear in 'Aunjetitz' graves in Bohemia and Lower Austria.<sup>3</sup> But, though apparently known so early in Period V, the device was not generally adopted in the Danubian area for a long time. Fibulae next appear in the standard Peschiera form with a twisted bow in the Tyrolese urnfields belonging to phase D and, in the equally old variant with a spiral catch-plate, A1, in North-West Hungary. North of the Alps no improvements were initiated during the Bronze Age, though in Bavarian urnfields that are still assigned to phase D appears a variant on type A3 in which the spring as well as the catch-plate consists of a spiral disk, as in B4;<sup>4</sup> while in Swiss lake-dwellings and graves of phase E, stray ribbed fibulae like A"2a were imported from Upper Italy. South of the Alps A1 develops through the series A2 to A5 and A6 east of the Danube, and into the harp-fibula west of the river. Still farther south there is another series in Illyria and Bosnia, described in Chapter XIX.

*Series B* In the north an entirely different series, in which the pin

<sup>1</sup> Szobi Kovacsbanya, Hampel, pl. ccxxv, 4; Soprony-Nyek, *ibid.*, pl. ccxiv, and Vattina, *Man.* xxvi. 100, fig. 1.

<sup>2</sup> Cf. p. 300 below; Petrie, *Tools and*

*Weapons*, p. 49.

<sup>3</sup> WPZ. xi, p. 33; Schráníl, *Böhmen*, p. 101.

<sup>4</sup> Wagner in *Götze-Fest.*, p. 173, fig. 4.

is a separate member, developed. The simplest form, B<sub>1</sub>, is assigned by Sophus Müller<sup>1</sup> to his period 3 (=phase C<sub>1</sub>), and even B<sub>2</sub> still falls within the limits of Period V. Both these types are virtually confined to Scandinavia.<sup>2</sup> But in Period VI, B<sub>2</sub> and the Hanoverian variant appear in the north and occasionally in Central Germany, Bohemia, and even Moravia. At the same time a variant with a flattened oval bow, B<sub>3</sub>, develops out of B<sub>1</sub> in East Central Germany and spreads southward with the Lausitz culture. It appears in the Rhineland in graves of phase E, but probably reached Bohemia and Moravia earlier. In the latter regions a subvariety with figure-eight twists at each end of the oval bow was developed and appeared apparently in graves of phase D. In that direction the development of the two-membered fibula was arrested by the spread of members of series A with the Hallstatt culture. But on the Rhine a variety with a wavy bow, B<sub>4</sub>, was created in phase E under the influence of the Bavarian variant of A<sub>3</sub>.

The earlier stages of the A series are important for their Aegean connexions, but the uncertainty as to which area can claim priority makes it perilous to use them for absolute dating. Reinecke<sup>3</sup> and Blinkenberg<sup>4</sup> have recently revived the view that the series started in the Mycenaean world. In that case, since the safety-pin first appears there late in the fourteenth century, the earliest European examples should be later than 1400 B.C. But it is difficult to bring down the so-called Aunjetitz fibulae from Gemeinlebarn so low. On the other hand, if the invention of the safety-pin took place in the vicinity of Bohemia and Lower Austria where these earliest examples appear, it is curious that the simple forms are so extremely rare in the Danube basin, and that for a long time no evolution can be traced there. It seems, in fact, clear that only in Scandinavia, Italy, and Greece, and then in a small area south of the Alps—Styria, Slovakia, Western Hungary, and Illyria—did the brooch fill a real need of the Bronze Age population. And in the last-named area that need was only felt at a comparatively late date. Still, the facts are perhaps best understood if we assume that a sort of safety-pin was first *invented* in Bohemia early in Period V, and that the idea was transmitted thence in two directions along the amber trade route to be realized in

*Origin of  
the safety-  
pin*

<sup>1</sup> *MSAN.* 1908, p. 32.

<sup>2</sup> Cf. *Mannus*, iv, p. 175.

<sup>3</sup> *Götze-Fest.*, l. c.

<sup>4</sup> *Fibules*, p. 40; the latest excavations

of Forsdyke have produced evidence very unfavourable to this derivation of the safety-pin from the Minoan 'hair-pin'.



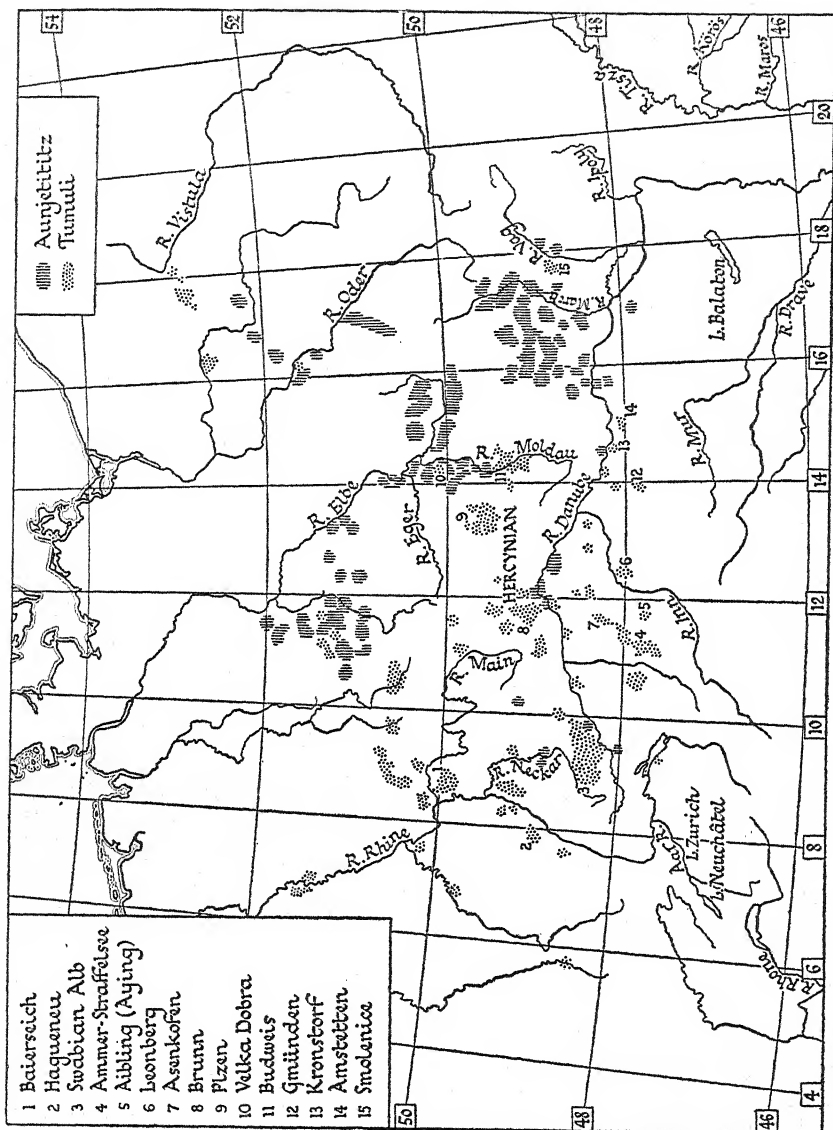
different forms—A1 and B1 respectively—at either end. The earliest Danish two-membered fibulae would thus be contemporary with the Peschiera brooches of Italy and Greece. Then the forms like A3 could very well be parallel to, or even derived from, their analogues found in sub-Mycenaean tombs on Cephallenia<sup>1</sup> and in pre-Villanovan hoards in Italy.<sup>2</sup>

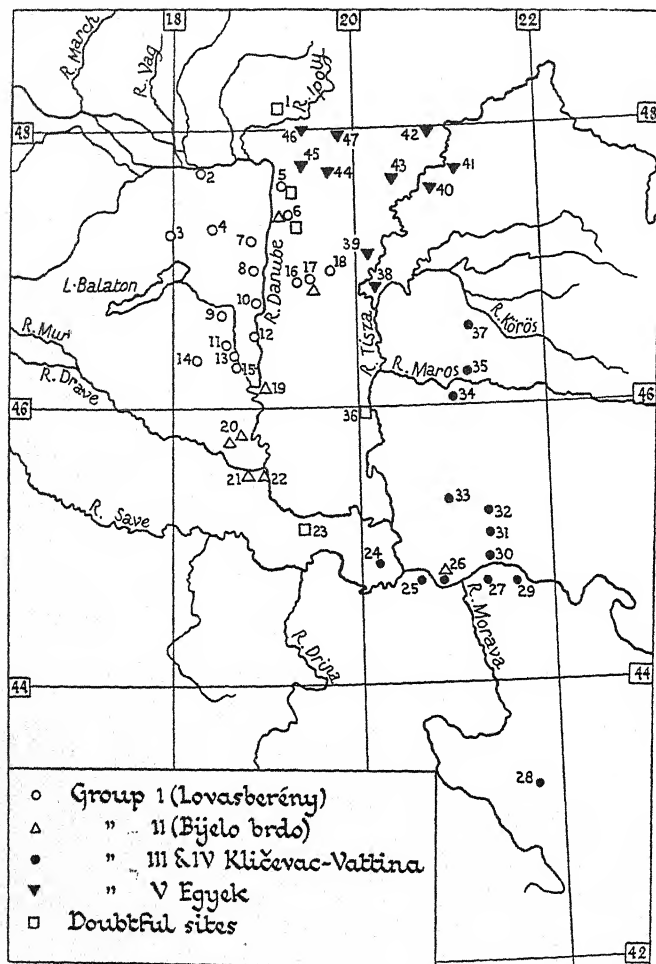
We see then that Period V is clearly distinguished from IV by the appearance of rapiers, short swords, socketed spear-heads, and celts of types, B2, C3, &c. Period VI is no less clearly defined by the spread of slashing swords, especially C3, C4, socketed celts, and fibulae including A3. Now the Mycenaean rapiers of fourteenth century type reach our area before the end of Period V, while the fibulae then current in the north are parallel to the fourteenth-century Greek types. On the other hand, the slashing swords, characterizing Period VI, appear as intruders in Greece during the thirteenth century, while the Greek and Italian parallels to fibulae like A3 can be little if at all later. Hence, we may add to the dates suggested at the end of the chapter the following figures :

<i>Period.</i>	<i>Reinecke's. phase.</i>	<i>Absolute dates.</i>
IV	A	1850-1500
V	{ B	1600-1450
	{ C	1450-1300
VI	{ D	1300-1100
	{ E	1100- 900

<sup>1</sup> Blinkenburg, *op. cit.*, fig. 13 b; 'Apx. 4ελr. 1919, p. 118.

<sup>2</sup> Randell-MacIver, *Villanovans*, pl. 19, 13.





Map VIII. THE URNFIELDS OF HUNGARY

- 1 Detva
- 2 Almás
- 3 Bakony Romand
- 4 Lóvasberény
- 5 Dunakeszi
- 6 Soroksár
- 7 Ercsi
- 8 Dunapentele
- 9 Simontornya
- 10 Bölcske
- 11 Kölesd
- 12 Gerjen
- 13 Harcz
- 14 Lengyel
- 15 Szekszard
- 16 Vartya
- 17 Izsák
- 18 Nagykörös
- 19 Szeremle
- 20 Kisköszeg
- 21 Bijelo brdo
- 22 Erdut
- 23 Babska
- 24 Surčin
- 25 Vinča
- 26 Temes Kubin
- 27 Kličevac
- 28 Gradac
- 29 Zhuto Brdo
- 30 Dubovac
- 31 Vršac
- 32 Vattina
- 33 Tolvadia
- 34 Temesnagyfalu
- 35 Pécska
- 36 Zenta
- 37 Mezőberény
- 38 Keménytétő
- 39 Tószeg
- 40 Tiszafüred
- 41 Egyek
- 42 Mohi puszta
- 43 Szihalom
- 44 Hatvan
- 45 Aszód
- 46 Pilin
- 47 Kisterenne

### XIII

## THE HUNGARIAN BRONZE AGE

### I. THE CHRONOLOGICAL FRAMEWORK

**D**URING Period III-IV we saw that the Hungarian plain was occupied by several distinct cultural groups. Apart from the outposts of Alpine-Nordic folk living in hill stations in Slavonia these might be divided into two categories according to their mode of life, namely, quasi-nomadic pastoralists, burying their dead under tumuli in North-East Hungary, and sedentary folk along the rivers. During Period IV the increasing dryness allowed freer movement to the former group, while the decline of the trade with Troy impoverished the riverine villages. As the first group have left few remains, the interaction of the two is hard to follow. It is clear that, before the end of Period V when trade connexions with the Aegean had been re-established with the foundation of Troy VI, a state of equilibrium had been reached. The whole plain was occupied to an extent never before nor after attained in prehistoric times by a relatively civilized population. Their remains are found in the huge urnfields where the blending of cultures is clearly visible. But the urnfields presuppose an intermediate stage of development, later than what we described in Chapter XI. The object of the present section is to survey the remains of this transitional stage and at the same time to expound the basis of our chronology.

*Complexity of culture*

The attempts to produce a typological classification of the Hungarian Bronze Age<sup>1</sup> have come to shipwreck on the rarity of genuine closed finds and on the longevity of most of the types which persist throughout the Bronze Age. On the other hand, the ceramic sequences established at stratified sites provide an unimpeachable basis for chronology.

*Futility of typological divisions*

Many of the great river-side villages, founded in Period III or earlier, were inhabited continuously throughout the Hungarian Bronze Age. Though Perjámos, Ószentiván, and Nagy Rév were abandoned early in the period, the Nagy Sándor at Pécska, Tószeg, Gerjen, and other sites were occupied continuously. Only the two first-named have been scientifically excavated, and they must form the basis for the division of the material from other sites.

*Stratified sites*

<sup>1</sup> Cf. Reinecke, *AE*. xix (1899); Kossinna, *ZfE*. 1902, pp. 210 f.; and von Miské, *AfA*. xv.

*Stratification near Pécska* In the settlement near Pécska<sup>1</sup> the pottery affords the clearest evidence of continuity throughout the long period represented by four metres of deposit. The mound is divided up by a series of layers of burnt clay-plaster, interspersed with strata of ashes and refuse. The pottery on either side of the burnt layers in no case allows of the assumption of a sharp break; the same types—notably the Perjámos mug—evolve slowly from the bottom to the top. The excavator, Dr. Roska, distinguished fifteen strata of varying thickness. We shall here simplify his scheme, taking as main divisions points where ceramic types, distinctive of specific groups of the Hungarian Bronze Age as represented elsewhere, first appear. By this procedure we obtain seven main levels denoted by the letters A to F respectively.

*Perjámos types* Roska's levels I to VII, comprising the lowest 92 cm., yield pure Perjámos types; we designate these by the letter A. In the next five layers (from 0.92 to 1.60 m. above virgin soil) no fresh types occur; throughout, the old forms develop in ever richer variety, but the 'ansa lunata'<sup>2</sup> appears already in the tenth stratum. These layers we term B. As distinctive of them we may mention an amber bead from stratum IX (1.00–1.10 m.) and the stone mould for a rhomboid dagger or spear-head<sup>3</sup> from X.

*Pannonian wares* First in the twelfth stratum (1.60–2.00 m. above virgin soil) does a definite link with another cultural group appear. This is a sherd of 'incrusted ware' of Pannonian or Kličevac type.<sup>4</sup> In the same level a mould for a flat celt or chisel was encountered. We call this level C, and synchronize it provisionally with the correspondingly lettered strata at Tószeg.

*Ansa lunata* In the succeeding thirteenth stratum, 0.50 m. thick, Roska found fragments of *ansa lunata* jugs, and in particular a very metallic variant of the native hour-glass type (Fig. 217)<sup>5</sup> which recurs at Gerjen.<sup>6</sup> From the same level came moulds for a socketed spear-head of late type and an axe of type C2.<sup>7</sup> Though the latter form is met at the bottom of the C layer in Tószeg we term layer XIII at Pécska, D.

In the succeeding fourteenth level (from 2.50 to 2.95 m. above virgin soil) the leading type is an hour-glass jug with contracted mouth like Fig. 221.<sup>8</sup> Clay moulds for flat celts and

<sup>1</sup> *Dolgozatok*, iii, 1912, pp. 1 ff.

<sup>2</sup> At Tószeg it is characteristic of C.

<sup>3</sup> *Dolgozatok*, l. c., fig. 25.

<sup>4</sup> *Ibid.*, fig. 43.

<sup>5</sup> *Ibid.*, fig. 45.

<sup>6</sup> Wosinski, *TT.*, pl. cv, 4.

<sup>7</sup> *Dolgozatok*, figs. 55–6. Cf. fig. 147, 5–12.

<sup>8</sup> *Ibid.*, figs. 59–60.

axes of type C2 are still found.<sup>1</sup> Above this is a disturbed deposit, presumably Iron Age.

In the parallel site on the Upper Tisza, Tószeg, the lowest level, has already been described. Above it come the remains of a very extensive and rich settlement. The pottery is a development of that of Tószeg I, but now the characteristic jugs and mugs have an angular profile.<sup>2</sup> We designate this layer by the symbol B1. *Stratification at Tószeg*

The rich deposit, characterized by several layers of ashes, just described, is succeeded by a layer, over 1 m. thick, of yellowish earth. It is full of animal bones and shells, and at frequent intervals floors, indicated by very thin bands of loose ash, and post-holes can be discerned. But no hearths nor deposits of burnt clay were detected, and sherds were extraordinarily rare. Yet from this poor layer came several moulds, including one for an axe of type C2 (in an early variant with ornamental ridges bordering the shaft-tube). Among the rare sherds, evolved B1 types predominate, but before the top of the layer incrustated sherds, hollow harpoon-tips, and other forms proper to level C already appear. The first amber beads belong to the same context. The significance of this layer is puzzling. The site was still inhabited, but we may question whether the occupation was as intensive or as continuous as before. Provisionally we designate the layer by the letter B2. *Barren layer*  
*Moulds*

Farther up lies a rich deposit, 1 m. thick, indicative of intensive occupation. It is traversed by four or five burnt layers, and contains hearths at several levels. The commonest pottery is the distinctive 'Tószeg wart ware' (*Buckelkeramik*, Figs. 162-3) mixed with abundant sherds of imported incrustated ware of Pannonian type. On the strength of these imports we term this level C, equating it with the corresponding phase at Perjámos. *Buckelkeramik*  
*Pannonian ware*

Finally, C is overlaid by a single burnt stratum containing hearths and a new fluted pottery identical with that recently found with the latest Mycenaean remains at Vardaroftsa in Macedonia.<sup>3</sup> With this was associated a seemingly local fabric ornamented with spirals (Fig. 213 b). *Fluted ware*

The above scheme is not without difficulties. It is based deliberately on the assumption that the bronze types persisted while ceramic forms changed (axe C2 in B1 at Tószeg, in D at Pécska). It would also be easy to object to the assignment *Difficulties of proposed division*

<sup>1</sup> *Ibid.*, fig. 67.

<sup>2</sup> Cf. p. 263 below.

<sup>3</sup> *Ant. J.* vii (1927), p. 48.



of the Pécska D-Gerjen group to a later epoch than the incrustated ware that characterizes the main Urnfield period of Central Hungary. There are still many stratified sites the excavation of which will establish once for all the sequence of cultures in the Danube-Tisza basin, and therewith the absolute and relative chronology of the Bronze Age.

With this proviso we may indicate the main links with the other cultural groups of Hungary. On the strength of the mould for an axe-head from Tószeg B, we assign to this phase the hoards and graves containing allied weapons, a dating which agrees with the typological position assigned to the sword from Hajdu Sámson.<sup>1</sup>

The incrustated ware from the C layers at Tószeg and at Pécska allows us to place in this phase the bulk of the earlier urnfield material and the appropriate phases of the corresponding settlements—Vattina, &c.

As representatives of D we may cite in the north the mass of finds from the urnfields of Upper Hungary, Mohi Pusztá, Egyek, Aszód, Hatvan, Pilin, &c., where fluted cups,<sup>2</sup> as in Tószeg D, occur. As much of the material from Gerjen corresponds to that from Pécska D we assign it to the same phase. So, too, among the cemeteries belonging to the large prehistoric village of Vattina in the Banat, Milleker<sup>3</sup> distinguishes that on the farms of Szimics and Kory-Naschitz which were characterized by an unusual paucity of bronze gifts but a rich ceramic furniture. Here high-handled cups similar to those from Gerjen (Fig. 219) predominate; these show a special type of wrinkled wart ornament found on vases of Benacci II form from the same area (Fig. 222) and again on the pottery of Troy VII. On these grounds we refer the Kory-Naschitz cemetery at Vattina and the analogous settlement at Omoljica on the Danube<sup>4</sup> to phase D, while the urnfield of Vršac which has yielded many bronzes would be confined to C.

*Division  
of Vattina  
culture*

## II. PHASE B OF THE BRONZE AGE

Remains corresponding to the B levels at Tószeg and Pécska are as yet rare, and it is impossible to define the cultural groups then existing. But as an introduction to the mature Bronze Age civilization of Hungary we shall describe the monuments

<sup>1</sup> *Man*, xxvi. 84.

<sup>2</sup> Hatvan, Pilin, &c.

<sup>3</sup> *Vattina*, p. 61.

<sup>4</sup> Finds in National Museum, Belgrade.

of this age under three heads, postponing to the next section a description of the Hungarian bronze industry.

(a) *The Terramara of Tószeg.* At Tószeg the culture of phase B was clearly, in the main, just a development of that described on p. 216 above as Tószeg A.

The pottery in its fabric agrees with that of the antecedent layer. The commonest form, too, is just a development of the Tószeg jug (Fig. 124), which is, however, now angular like mature Aunjetitz jugs. The old vase-stands and flat lids went out of use, and a deep carinated dish with four handles just under the rim appears for the first time. It seems to have grown out of the Early Bronze Age form shown in Fig. 126 d. Pottery

Stone implements are now rare, but bone and horn was still freely used, as in the first settlement. Horn and bone tools

Metal<sup>1</sup> appears in the form of flat celts and flat, triangular, round-heeled daggers with rivets for the hilt, identical with our type A1 from Bohemia. Among the bronzes are massive bracelets with slightly tapering ends and pins of type A4. Gold ear-rings of type D1 were also worn. An indispensable adjunct to the use of knife-daggers was the square plaque-shaped whetstone, reminiscent of the bracer but thicker, narrower, and not curved to fit the wrist. Metal

Abundant remains of grain and the bones of domestic animals disclose the main diet of the inhabitants of Tószeg. These also consumed the flesh of game—including the red deer—and collected fresh-water mussels. Whet-stones

The bones and hoofs of horses are already relatively common at this level; the discovery of the horn cheek-piece of a bit<sup>2</sup> proves that the animal had already been tamed. This is the earliest conclusive evidence for the domestication of the horse in Europe, and probably the oldest bridle bit found anywhere in the world.<sup>3</sup> It is probable that the horse had been introduced domesticated during Period III by the nomad invaders whose barrows are found along the Upper Tisza (p. 206). The invention of the bit perhaps took place in that region. Thence it was rapidly diffused along the trade routes northward to Sweden.<sup>4</sup> It was soon conveyed from Hungary Food supply

<sup>1</sup> *Jelentés a M.N. Muz. 1907 évi*, p. 180, fig. 27.

<sup>2</sup> Found in May 1927; for the shape cf. fig. 160 below.

<sup>3</sup> The horses drawing the chariot of Thothmes IV, whose reign is no earlier than Tószeg B, were controlled by a

nose-rope and halter: Carter and Newbury, 'The tomb of Thutmôsis IV', *Cat. Cairo Museum*, p. 26.

<sup>4</sup> Specimens belong to Montelius' Bronze I (?) from Kvarnby (Sweden) and Trebnitz (Wimptsch, Silesia); *PZ.* ii, pp. 175 and 178.

*Horse domesticated*

*Bits*

to Italy,<sup>1</sup> and in the Urnfield period to the Alps, the Rhine valley, and even the Caucasus.<sup>2</sup>

*Houses* The houses of Tószeg B approximated to the *megaron* type. But the two long sides were never exactly parallel and the corners were generally slightly rounded. In the long inner room stood a hearth of baked clay (Fig. 144).<sup>3</sup> The floor was of stamped clay, possibly spread over a layer of rushes or even saplings. Along one wall there are often remains of a rough-hewn log through which at times holes have been cut for the reception of the uprights. There are further occasional remains of stout piles reaching just to the level of the floor. Nevertheless, the houses were not raised above the level of the surrounding soil.

*Piles* If the Tószeg huts were thus in no sense pile-dwellings, it remains none the less possible that the whole settlement rested on an artificial embankment. The inner sides of the moats or natural watercourses<sup>4</sup> were certainly strengthened with a palisade of stout piles. These may have served less to protect the settlement against foes than to support the natural or artificial mound on which it stood against erosion by water.

*Palisade* Graves of this period are unknown at Tószeg.

*Allied sites* Tószeg was certainly not an isolated phenomenon. Szihalom and Tiszafüred must have been very similar. The same ceramic types are to be found west of the Danube in Tolna County.<sup>5</sup> Moreover, the so-called *terramara* of Gerjen<sup>6</sup> must have been occupied in phase B as in phases A and D, and it may have been constructed on the same plan as Tószeg. Wosinsky certainly mentions piles, though elsewhere<sup>7</sup> he speaks of beehive 'pit-dwellings' as being excavated in the mound. So, too, in the *terramara* near Pécska Roska found a 'pit-dwelling' the mouth of which opened into the seventh layer (our B).<sup>8</sup>

*Gerjen* Was The 'Flat Hill' of Tószeg has been compared, ever since the days of Pigorini,<sup>9</sup> to the famous settlements in the Po valley. Yet if the traditional definition of a *terramara*<sup>10</sup> as a 'lake-

<sup>1</sup> Peet, *Stone and Bronze Ages*, p. 353.

<sup>2</sup> Chantre, *Caucase*, pl. xx bis, 10.

<sup>3</sup> *Jelentés a M.N. Muz.* 1912 évi, pp. 194 ff.

<sup>4</sup> Cf. p. 220 above.

<sup>5</sup> Wosinsky, *TT.*, pl. LXXXII, 1, 4, 5.

<sup>6</sup> *Ibid.*, pp. 410-34.

<sup>7</sup> *Ink Ker.*, p. 51; very likely these

were first dug at a later date when this type of structure became common elsewhere.

<sup>8</sup> *Dolgozatok*, iii, p. 73.

<sup>9</sup> *CIA*. 1877 (Buda-Pest), p. 19; Munro, *Terremare*, p. 450.

<sup>10</sup> Peet, *Stone and Bronze Ages*, p. 331.

dwelling on dry land' be accepted without reserve, the comparison cannot be admitted as relevant. But perhaps the reconstructions and plans, based upon very early excavations, should not be interpreted too strictly. Real points of agreement between the Tisza and the Po are disclosed in the palisade of piles (the *contraforte* of the Italians) and the puzzling constructions of horizontal logs at Tószeg. The horn cheek-piece from a bridle bit is another vital link, and the bone

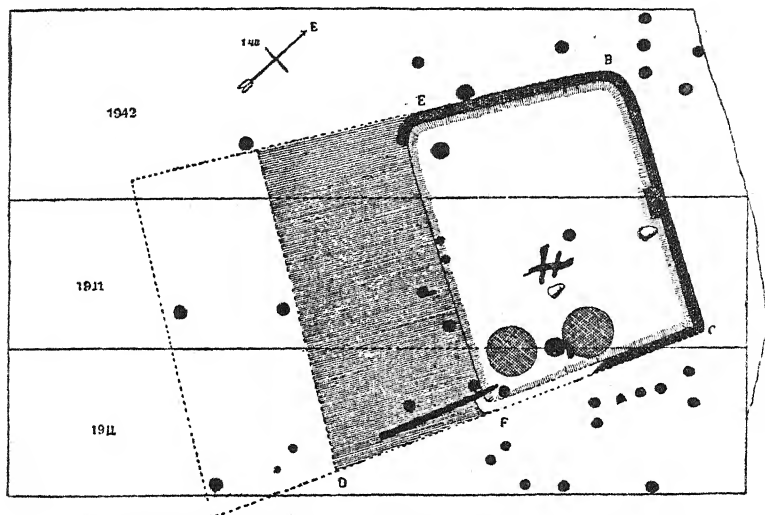


FIG. 144. House from the *terramara* of Tószeg, after Márton.

arrow-heads are likewise significant in both areas. And if neither the *ansa lunata* nor the plastic figures of animals so common in the Italian stations have yet been found *in situ* in Tószeg B, both had been known in the Danube-Tisza area earlier, and reappear in Tószeg C. And many ceramic forms—the flat lids, the 'vase-stands,' &c.—are common to the two cultures.<sup>1</sup>

It is not therefore impossible that Tószeg, or some more westerly stations of the same type, may contain the germs from which the *terramara* culture of Italy sprang.

(b) *Graves of Phase B.* Besides the remains collected in the appropriate layers at Tószeg and Pécska and certain hoards, the only monuments of this early phase are a few tombs.

In several of the great urnfields belonging to phase C or

<sup>1</sup> An admirable summary of the points of agreement is given by Márton in *Jelentés a M.N. Múzeum 1912 évi,* pp. 192 f.

Inhumation  
graves in  
urnfields

later, a few inhumation graves containing contracted skeletons and a distinct pottery occur. Thus at Bene, near Kecskemét, the corpse was accompanied by *ansa lunata* jugs and a pin of type A4.

Warrior  
graves

Typologically the warrior graves containing rapiers and battle-axes from Zenta<sup>1</sup> and Vattina (Fig. 145)<sup>2</sup> belong to phase B.<sup>3</sup> In each case the rite was inhumation; at Vattina the corpse lay in a sort of wooden coffin.<sup>4</sup> Another grave

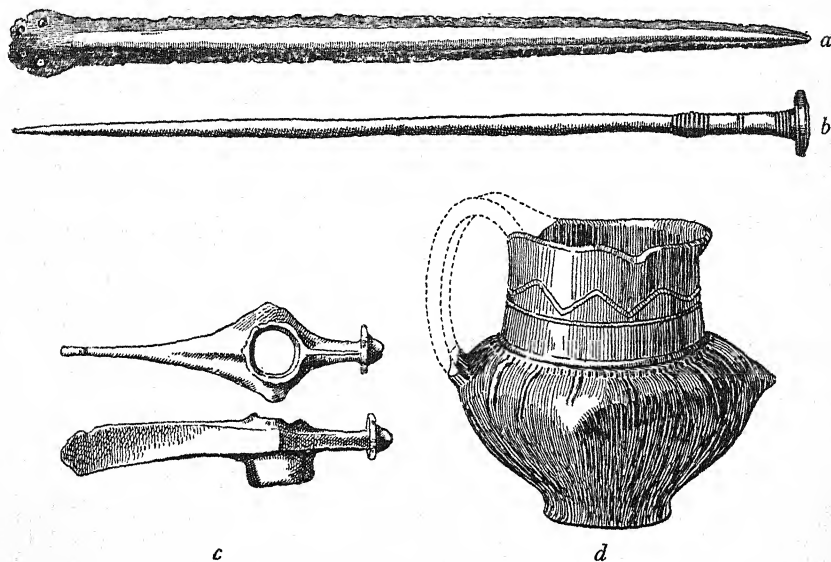


FIG. 145. Grave group, Vattina, after Milleker. a  $\frac{1}{8}$ , b  $\frac{1}{3}$ , c  $\frac{1}{2}$ , d  $\frac{1}{3}$

*Cowrie shells* at Vattina contained a cowrie shell<sup>5</sup> showing that trade with the south was already beginning again.

*Cord-ornamented  
urns*

Finally, in the urnfields of the Banat and Eastern Syrmia are some cremation graves which may yet belong to phase B. In these the cinerary urn is a sort of corded amphora. Save for the rim that betrays the influence of metal vessels, the urns in question correspond exactly in form and ornamentation to the 'neolithic' vases of Thuringia (Fig. 146 c, cf. Fig. 86). One such urn contained, besides ashes, an undecorated pin of type

<sup>1</sup> *AE.* xviii, p. 287; rapier A2; axe A1; pin C7; bracelet F1.

<sup>2</sup> Milleker, *Vattina*, pl. 1, 1, 2, and 4 (rapier A2, miniature axe, pin C7).

<sup>3</sup> Probably the articles shown in Hampel, pl. cxxxiii (axe A1, spear, tutu-

lus A4, pendant B4, pin B7, and an arm cylinder), come from a grave.

<sup>4</sup> Milleker, *l.c.*, p. 62.

<sup>5</sup> M. Vršac; other furniture, a thin bracelet of form D1, a tutulus A2, and a two-handled cup.

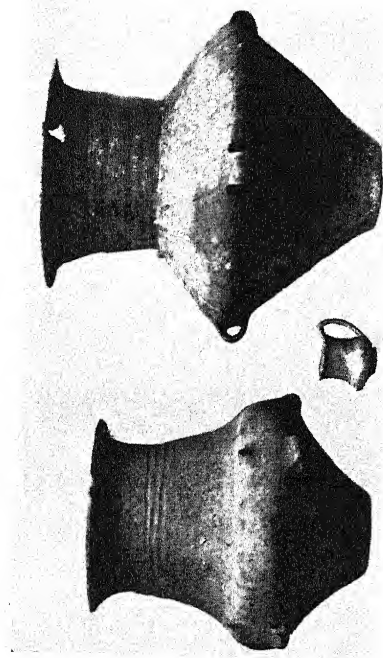


FIG. 146. Corded urns from Vattina. M. Vršac.  $\frac{1}{2}$

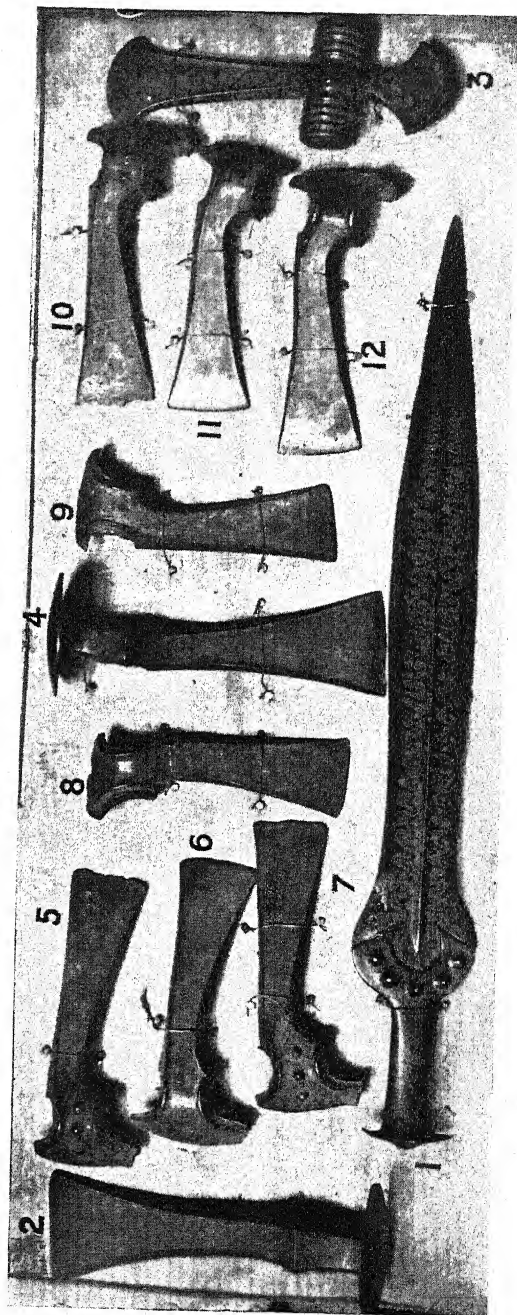


FIG. 147. Hoard of Hajdu Sámson. M. Debreceen.  $\frac{1}{2}$





C<sub>3</sub>, a sort of razor, and a heart-shaped pendant, B<sub>3</sub>.<sup>1</sup> We suggest placing the corded urns in phase B on account of the 'neolithic' affinities of the form and decoration. The type seems later to have been modified; curvilinear patterns resembling Prince of Wales' feathers replace the linear motives and the cord impression is imitated with the aid of a twisted ring.

We have seen that cremation was quite often practised by the makers of corded ware,<sup>2</sup> and that they were already spreading over the Hungarian plain in Period III. The suggestion is that the cord-ornamented ware of the Banat and Syrmia represents the funerary pottery of some of the invaders who had settled down among the native Danubian and Perjámos folk as conquerors or overlords, and that, as in Alsace,<sup>3</sup> the introduction of cremation was inspired by their example. Traces of the same folk are also observable in the urnfield pottery farther north. Hence one may conclude that they constituted an important element, perhaps the main unifying principle, in the urnfield cultures that we must next describe.

*Influence  
of corded  
ware*

<sup>1</sup> *Man*, xxvi, 100, fig. 1.

<sup>2</sup> p. 150 above.

<sup>3</sup> p. 309 below.

## THE URNFIELD CULTURES OF HUNGARY

## I. GENERAL FEATURES

**B**EFORE the end of the Middle Bronze Age the various economic groups inhabiting the Hungarian plain in the Early Bronze Age had amalgamated and settled down. Hungary was again a unitary province. The civilization of the period is best known from the extensive cemeteries of flat graves—for the most part urnfields. Considerable local divergences can be detected, but all the groups were continually interrelated as the even distribution of the leading bronze types and, still more, of ceramic products indicates.

*Local groups* Within the plain it is convenient to distinguish five main local groups. Taking the chief funerary vessels as the basis of division we get the following scheme (Map VIII):

1. Lovasberény-Vatya group, from the Danube north of the Bakony to the Middle Tisza.
2. Bijelo-brdo group along the Middle Danube and in Eastern Slavonia.
3. The Kličevac group in North Serbia.
4. The Vattina culture in the Banat and on the Maros.
5. The Upper Tisza group.

We may first summarize the common features.

*Distribution of settlements.* The most important settlements lie, as before, along the great waterways, but now extend on both sides of the Danube beyond the borders of the löss into country previously unoccupied. The extension of the area of settlement can only have been rendered possible by the dry climatic conditions of the Subboreal epoch; the forests were thinning out and the inundations less frequent and less extensive. The quantity of boars' and red deers' bones from the settlements nevertheless implies the existence of considerable woods, even at this period.

*Regular villages* The large size of the cemeteries indicates a sedentary population. The remains of grains and the animal bones show that both agriculture and stock-breeding were practised. The pig in particular was a staple article of diet.<sup>1</sup> Horn cheek-pieces from bits from Vattina, Tószeg, Tiszafüred, and other sites show that the horse was domesticated. Milleker<sup>2</sup> denies that

<sup>1</sup> At Vattina joints of pork were often deposited in the graves.

<sup>2</sup> *Vattina*, p. 55.

he was ridden, but the typical weapon is perhaps better adapted for a knight than for a foot-soldier.<sup>1</sup> Hunting was everywhere important, and fishing played no less prominent a role; when the village was not established on a river bank, preference was given to the shores of an inland lagoon.

*Horse  
domesti-  
cated*

The importance of trade is revealed in the position of the settlements. Those which do not lie on the waterways command cross-country routes—the overland route cutting off the Danube bend between Pressburg and Buda-Pest (Lovasberény), and its extension towards the gold-bearing rivers flowing from Transylvania (Izsák, Vátya, Kecskemét), and again the short cut from the Maros to the mouth of the Morava (Vattina, Vršac, Palanka, Kličevac). This commerce brought in the first instance tin from Bohemia, but occasional amber beads (Bölcske, Vátya, Tószeg, Pécska, Temes-Nagyfalu) suggest that the chief product of the Baltic<sup>2</sup> was imported along the same route. In exchange for the northern commodities, not only copper and gold but the finished products of the Hungarian bronze industry were exported, as numerous finds in Bavaria, Bohemia, Silesia, and North Germany show.<sup>3</sup>

*Trade*

*Amber*

Of greater historical significance was the trade with the Aegean which revived with the resurrection of Troy. Cowrie shells from a grave at Vattina and paste beads from Vátya, Keménytétő (near Tiszaug), and Tószeg are conclusive proof of such trade, but its influence is seen in many of the bronzes.

*Imports  
from  
Mediterranean*

The inhabitants of the Hungarian plain were not only traders but also most successful metallurgists. Especially in the villages along the Tisza moulds for axes and other tools are quite common, and the Hungarian bronzes were, as we have said, exported far and wide. The mining region of Transylvania has unfortunately scarcely been explored, and from North Hungary and Slovakia we can only point to a few stray pots and bronzes of early type<sup>4</sup> to prove that the minerals were being exploited in the first Urnfield period.

*Metal-  
lurgy*

The extent of the villages and cemeteries betokens regularly organized communities. Some graves of passing wealth, particularly in the Banat, evidently belonged to warriors<sup>5</sup> who

*Chiefs*

<sup>1</sup> Suggestion made by Prof. Myres before the O.U. Anthropological Society, 2 June 1927.

<sup>2</sup> But there is amber in Transylvania, and Milleker believes the beads found in the Banat came from this source. *Führer*, p. 14.

<sup>3</sup> Cf. pp. 272 and 316 below.

<sup>4</sup> Note especially the halberd from Hont, *ZfE*. 1896, p. 76, and the curious axe with early decoration from Kisterenne, *AE*. xxxiii (1913), p. 310, fig. 29. Cf. p. 222 above.

<sup>5</sup> Cf. p. 266 above.

might be chiefs, but as a rule the cemeteries seem free from glaring class-distinctions.

*Crema-  
tion and  
inhuma-  
tion* The burial rite was not uniform. In groups 1, 3, and 4 cremation according to a very strict rite was the sole mode of sepulture in the period under review, though in most of these cemeteries there are one or two inhumation graves, dating apparently from an earlier epoch.<sup>1</sup> In group 2 both cremation and inhumation in the contracted posture were practised. At the cemetery of Egyek in group 5 the cremation graves belong for the most part to a later period. It is significant that the strict cremations all lie along the main trade route; we shall see in a subsequent chapter that the same rite was observed on the extension of that route up the March and the Upper Danube.

*Crema-  
tionists'  
ritual* The rite was as follows: the body was burned, probably in an *ustrinum*, and the ashes collected and deposited in clay ossuaries. Gifts of weapons were unknown, and even ornaments were sparingly entrusted to the pyre. The urn with accessory vases containing food and unguents was then buried in the earth. The vessel was covered with a dish, but, at least in group 1,<sup>2</sup> a hole was frequently bored in the walls of the ossuary. It is supposed that the aim was to let the soul escape, and German archaeologists term the aperture a soul-hole (*See-lenloch*). The urn-graves constitute regular cemeteries termed urnfields.

*The See-  
lenloch* The industry of Hungary in this and the immediately preceding phase is characterized by a variety of specialized types which, owing to the parsimony of funerary gifts, cannot be assigned to specific groups.

*Leading  
bronze  
types* The flat celt continued in use throughout the pure Bronze Age in Hungary as a chisel. Perhaps the normal axe-head was the single-bladed implement with an eyelet for the shaft, described below. At the same time the Bohemian palstav was freely imported, and is found as far south as Serbia;<sup>3</sup> in North Hungary and Slovakia it was quite common. The 'winged' prototypes are found occasionally, especially west of the Danube.<sup>4</sup>

*Celts  
rare* Hungarian warriors were armed with a battle-axe and a sword or, more often, a spear. The battle-axe was the distinctive weapon and may have been used particularly by horsemen.

<sup>1</sup> p. 266 above.

<sup>2</sup> Lovasberény (*AE.* xvii, pp. 315 f.). Examples from Vátya, Izsák, &c., at Kecskemét.

<sup>3</sup> *Starinar*, 1906, p. 94 (Vinča).

<sup>4</sup> But there is one from Temes Nagyfalú in the Banat. Note that Hampel in his statistics (iii, p. 41) does not distinguish between Bohemian palstavs and winged celts of series B.

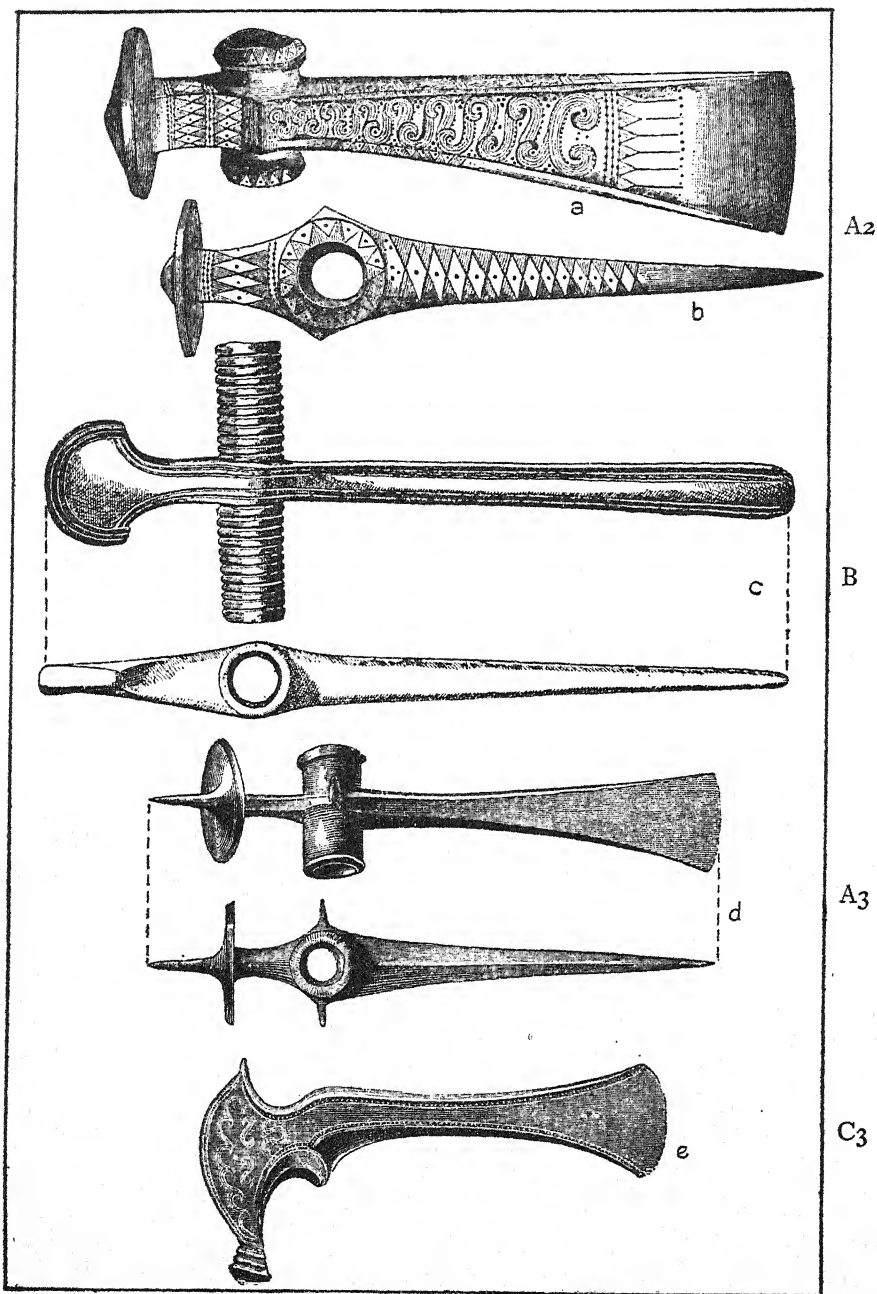


FIG. 148. a-b Type A2, d A3, c B, e C3. Hungarian Battle-axes.  $\frac{2}{3}$

*Battle-axes* The most distinctive type has a disk for the butt (Figs. 147, 2, 148 b). This hammer-axe is clearly a native form derived immediately from the copper axes of Period III-IV. The earlier types have a rounded convex butt. Later a spike is developed which grows longer with time until in phase D we have a flat (A<sub>3</sub>, Fig. 148 d) form with a spike growing from it.<sup>1</sup> The centre of manufacture was apparently North Hungary,<sup>2</sup> but the type is distributed widely over the whole plain down to Serbia. In Transylvania it is rare,<sup>3</sup> and beyond the Danube, too. A miniature type, Aa, with a knobbed butt (Fig. 145, 4), was deposited in graves<sup>4</sup> of group 3.

From Hungary type A<sub>2</sub> was exported to Upper Austria and Bavaria,<sup>5</sup> Silesia,<sup>6</sup> Pomerania,<sup>7</sup> Galicia,<sup>8</sup> and across the Ukraine to the Dniepr.<sup>9</sup> The later variety is found in barrows in Lower Austria<sup>10</sup> and Bohemia.<sup>11</sup> Association with early swords at Zenta and Hajdú Sámson show that the type goes back probably to phase B, but the later varieties belong to Period VI.<sup>12</sup>

*Type B* The second type of battle-axe has a very narrow blade and a fan-shaped butt (Figs. 148 b and 147, 3). The narrow blade is reminiscent of Mesopotamian and Syrian forms and must be inspired from that quarter. The type is met at Vattina in the Banat, in County Pest, and on the Upper Tisza. Outside Hungary it has been found at two sites in Moravia, three in Bohemia, and one each in Lower Austria, Bavaria, Silesia, and Mecklenburg-Strelitz.<sup>13</sup> The early date of the type is proved by its context in hoards at Hajdú Sámson and Křténov, and in a late Aunjetitz grave near Retz.<sup>14</sup>

*Single-bladed axes* Single-bladed axes (Fig. 147, 5-12) are common east of the Tisza, whence 54 out of 64 specimens come.<sup>15</sup> The prototype

<sup>1</sup> von Richthofen, p. 94. Association with an octagonal hilted sword in the depot of Tachlovice (*PA.* xviii, p. 248) gives phase C<sub>2</sub> as upper limit for the late type.

<sup>2</sup> Early specimens from Nagy Iklód (Szolnok-Doboka) near Szamosújvár (*AE.* xvii, p. 105, fig. 57) and County Torda (*AE.* xxiv, p. 206).

<sup>3</sup> No moulds have been found, according to Götze, because the type was cast by the *cire perdue* process, *Real.* ii, p. 154.

<sup>4</sup> Milleker, *Vattina*, pl. I, 4. There is another from the urnfield of Surčin in Syrmia.

<sup>5</sup> *AuhV.* i, pt. IV. 11, 12. There is

another from Hall in Upper Austria, Theuer, p. 39.

<sup>6</sup> von Richthofen, pl. 25, k-m.

<sup>7</sup> *Baltische Studien*, 1901, pl. 1.

<sup>8</sup> *PZ.* x, p. 160 (Stefkovo hoard).

<sup>9</sup> Tallgren, *Pontide*, p. 173.

<sup>10</sup> Winklarn.

<sup>11</sup> Richly, pl. LII; Schránil, *Böhmen*, pl. xxvi, 13.

<sup>12</sup> Rákos Palota and Alsó Nemedi may be B or C; Stefkovo in Galicia, C or D; Domahida, D or later.

<sup>13</sup> von Richthofen, p. 97.

<sup>14</sup> Richly, pl. XIII; Schránil, *l. c.*, pl. xxvi, 14; *MAGW.* lvii, p. 205.

<sup>15</sup> *AE.* xxxiii, p. 306.

might be seen in the copper axe described in Chapter XI (Fig. 113). But despite their material and early associations, these axes are not as a whole necessarily older than the Bronze Age type under discussion here. The bronze axes were certainly manufactured at Tószeg, Pécska, and Vattina; moulds have been found at all these sites, in the first-named as late as level E, but at Tószeg low down in C. Some of the bronze specimens, e.g. Fig. 147, are reminiscent of Asiatic models.<sup>1</sup> A remarkable Transylvanian type with an extension at the back looks like a bad imitation of the Syrian axe with a spring back, in use during the second millennium, but actually it seems to belong to a much later context than the class just described.

Swords of early type are rare in Hungary. Rapiers with four rivets have been found together with battle-axes in inhumation graves at Zenta and Vattina (Fig. 145). These are the only early warrior graves with swords from the plain known to the writer. Perhaps the rapiers are modelled on the Minoan types current in the sixteenth century B.C.<sup>2</sup> On the other hand, the earliest known leaf-shaped sword is that from Hajdú Sámson (Fig. 147). Its decoration shows it to be a native type, but the form recurs in Denmark.

*Rarity of  
swords*

*Leaf-  
shaped  
sword*

An alternative to the rapier would be the spear with socketed bronze head. The blade is always a simple leaf-shape. An early specimen was included in the finds from Mezőberény. In this shape again Aegean influences may be recognized.

*Spear*

The bow seems to have played only a secondary part during the Middle Bronze Age, but that is perhaps because the arrows were tipped with bone points which have perished.

Despite the great wealth of bronzes, implements and weapons of stone, flint, horn, bone, and boars' tusk are found in profusion in all settlements and even in graves all over Hungary.

*Persis-  
tence of  
stone  
tools*

A great variety of ornaments of gold or bronze were worn in Hungary both by men and women. The neck was encircled by necklaces of beads and pendants, and occasionally by torques. The arms were weighted with penannular bracelets and arm-coils of hammered metal. Rings adorned the fingers, the leather girdle was studded with metal buttons and tutuli, while girdles of hammered bronze were soon to be made. Even the

*Orna-  
ments*

<sup>1</sup> The agreement extends to small details such as the reinforced back with ornamental rivets, the cut-away shaft tube, and the ridges bordering it. Cf. specimens from Nineveh and Pales-

tine in the British Museum, and *Antiquity*, ii (1928), pl. iv.

<sup>2</sup> But cf. the weapon from an Early Helladic 'pyre' on Levkas, Dörpfeld, *Alt-Ithaka*, B. 62, 3.



legs were decked with anklets and cylinders. Pins served to hold the garments in place and to adorn the hair. Ear-rings were hung from the ears, and other pendants twisted in the locks. Hungarian apparel must have had a thoroughly barbaric look; similar trappings are worn in Africa or Borneo to-day. But the Hungarian objects often have a distinct aesthetic merit.

Since all the main types of ornament current during the Middle Bronze Age in Central Europe are represented in Hungary, and many originated there, a summary of the chief types may be given here.

*Bracelets* Bracelet C1 is characteristically Hungarian<sup>1</sup> but was exported to Lower Austria and Bavaria. C2 is a cheaper variant made (Plate 8) of thin ribbon, convex on the outside. In Hungary it is common in urnfields of groups 1, 3, 4, and 5. It was exported to Bosnia,<sup>2</sup> Lower Austria,<sup>3</sup> Bohemia,<sup>4</sup> Oberpfalz,<sup>5</sup> and Upper Bavaria.<sup>6</sup> Its association in the latter area with a wheel pendant shows its relative lateness. C3 has similar connexions. B1 has prototypes in the Aunjetitz industry. In Hungary it occurs in urnfields of group 1, in the hoard of Rákospalota, and elsewhere. In Moravia it still occurs in Late Bronze Age hoards. B2 characterizes the urnfields of groups 3-4, and was exported over the same area as C2. In South Germany Kraft assigns it to phase D.<sup>7</sup> D1 occurs in the hoard of Rákospalota. There are many specimens from Moravia,<sup>8</sup> Silesia, and Poland, some of which are certainly Late Bronze Age. Probably these heavy rings were worn on the upper arm or on the ankles; they are always found in pairs.

Heavy coils of thick rectangular wire with a loop at one end and a spiral disk at the other (D 4) (Fig. 209) are peculiar to Hungary.<sup>9</sup> Their use is uncertain, though they have a certain likeness to the bracelet last described. Perhaps the arm was slipped through the loop and the spiral was brought over to cover the breast,<sup>10</sup> for the objects generally go in pairs. They belong to the end of the Bronze Age, and were most popular in the north and west.

*Cylinders* Cylinders, terminating in spirals, were another Hungarian

<sup>1</sup> Closed finds; Bijelo brdo (grave), Rács-Egres, Rákospalota.

<sup>2</sup> *WMBH.* vi, p. 60.

<sup>3</sup> Amstetten XI.

<sup>4</sup> Pič, ii, pl. 11, 7, 15, &c.

<sup>5</sup> Brunn I.

<sup>6</sup> *PBL.* 1895, p. 51; Naue, *OB.*, p. 185.

<sup>7</sup> *Bronzezeit*, p. 73.

<sup>8</sup> *JfA.* i, pl. iv, 1; *JZK.* 1906, p. 256; von Richthofen, p. 86; Beltz, p. 186.

<sup>9</sup> There is one from a hoard found at Stockerau in Lower Austria.

<sup>10</sup> I owe this suggestion to Dr. Polak, Keeper of the Košice Museum.

speciality exported to Oberpfalz,<sup>1</sup> Poland,<sup>2</sup> Central and North-East Germany.<sup>3</sup> The association in Poland with a flanged celt with only rudimentary stop-ridge suggests a relatively early upper limit for the type. No Hungarian examples come from graves; most have been found in the area of groups 1 and 5.

The knot-headed pin A1 (Pl. 10), introduced before the *Pins* beginning of the Bronze Age, lasted in use into the urnfield period in group 2, but principally in the variant B1.

A4 appears in the B settlement at Tószeg, and it, or its variants, remained in use all through the Urnfield period. We have met the type in the Early Bronze Age of Bohemia, but it may be a native Hungarian form derived from the Syrian globe-headed pin with an eyelet in the neck.<sup>4</sup> B5 seems a Hungarian variant on the same type though there are analogues in bone from Danish passage-graves.<sup>5</sup> It is native to Western Hungary.<sup>6</sup> B7 is a development of the foregoing. The eyelet is formed by a projecting spur meeting the head. The majority of specimens belong to the Late Bronze Age of North Hungary<sup>7</sup> when gigantic specimens occur. An allied form B6 occurs in Moravia and the Bohemian tumuli, and again in West Hungary. Of the remaining pins B4 is a variant on a well-known Aunjetitz form; A6 is also paralleled in the Aunjetitz area; B2 occurs in urnfields of groups 1 and 4 and in Aunjetitz graves; B11 is peculiar to groups 2 and 3 save for one example from Lower Austria. The author only knows one (plain) example of the Swabian pin, C3, in Hungary; it comes from a grave at Vattina, where the ossuary was a corded amphora.

In default of amber, gold<sup>8</sup> was often used for beads, and a variety of bronze pendants were worn on necklaces; a selection of types is shown in Fig. 149. Of these 18 is the most distinctive; for it is represented in many hoards and almost every cemetery; moulds for its manufacture have been found at Felső Kubin in Northern Slovakia.<sup>9</sup> A variant in gold is known from North Serbia.<sup>10</sup> The form is Mycenaean in origin, being a bad copy of the Minoan sacred ivy-leaf,<sup>11</sup> but it soon became

<sup>1</sup> *Verh. OP.* lv, p. 229; lx, p. 146.

<sup>2</sup> *Mannus*, viii, pls. ix-x.

<sup>3</sup> *JST.* viii, fig. 26; Kossinna, *DV.* fig. 132; *Balt. Studien*, 1901, p. 9 (Rosow near Stettin), &c.

<sup>4</sup> Cf. p. 235.

<sup>5</sup> Lissauer, *ZfE.* xxxix (1907), p. 794.

<sup>6</sup> Regelsbrunn (in Burgenland), Rákospalota near Pest, Bijelo brdo in Slavonia, &c.

<sup>7</sup> Dated by the grave-finds at Zagyvapálfalva, *AE.* xl (1925-6), p. 67, fig. 24.

<sup>8</sup> Note among the shapes the four-pointed star, *Starinar*, 1907, p. 103, figs. 2-3.

<sup>9</sup> *AE.* ii (1882), p. 279.

<sup>10</sup> *Starinar*, 1907, pl. II.

<sup>11</sup> *Evans-Festschrift*, pp. 2 f.

*Minoan origin of type* naturalized in the Middle Danube basin and spread thence by trade up the river to Bohemia,<sup>1</sup> Upper Austria,<sup>2</sup> Upper Bavaria,<sup>3</sup> Wurtemberg,<sup>4</sup> and even Alsace.<sup>5</sup>

In Hungary specimens have been found with early rapiers or axes in the graves of Vattina and in hoards, but it lasts in use to the end of the Bronze Age.<sup>6</sup> The Bavarian specimens from Asenkofen are dated by an associated rapier to Reinecke's C1, but Schaeffer assigns the Alsatian examples to a later stage. The closed variant (Fig. 151 a) belongs likewise to the Urnfield period and is no older<sup>7</sup> than the open-work model.

The pectiform pendant, no. 28, is perhaps represented among the trinkets hanging down the back of the Kličevac idol. A mould for its manufacture was certainly found at Lengyel.<sup>8</sup> Matz<sup>9</sup> notes that the pattern incised on a Thessalian B2—neolithic—sherd was inspired by a similar object.

*Tutuli* Among the ornaments designed for wearing on the girdle we must note tutulus A2, whose previous history lies in Upper Bavaria, if Kraft<sup>10</sup> is right in regarding the form A1 from the Early Bronze Age graves of Straubing as its prototype. Aegean, on the other hand, are the hollow buttons of gold or bronze, A0.<sup>11</sup>

*Technique* The Hungarian bronze-workers had attained a high degree of technical excellence. The manufacture of shaft-hole axes, going back to the beginning of the period, presupposes familiarity with the art of core-casting.

*Use of hammer* The majority of Hungarian bronzes were certainly cast. Hoernes<sup>12</sup> denies the use of the hammer as a formative tool altogether. It is nevertheless clear that this implement was employed in shaping gold disks, and very likely the common ornamental bronze plaques, and perhaps even the broad ribbons of cylinders and girdles, were beaten into shape.<sup>13</sup>

*'En-graved' decoration* Weapons and ornaments alike were often gorgeously decorated. The finest specimens of Hungarian art are the weapons

<sup>1</sup> Pič, ii, pl. ix, 9; other examples in Plzen Museum. Cf. Schráníl, *Böhmen*, p. 121.

<sup>2</sup> Ratishof, Inntal, N.H. Museum, Vienna, Theuer, p. 40.

<sup>3</sup> Asenkofen E.

<sup>4</sup> Kraft, *Bronzezeit*, pl. xxxiii, 2.

<sup>5</sup> Schaeffer, *Haguenau*, fig. 38, s.

<sup>6</sup> Proved by its discovery in the urn-field of Zagyvapálfalva, *AE.* xl, pp. 61 f., figs. 19, 23, 24, and 25.

<sup>7</sup> As Reinecke (*AE.* xix) and von Miské (*AfA.* xv) have erroneously suggested.

<sup>8</sup> Wosinski, *Lengyel*, pl. xxxvi, 286.

<sup>9</sup> *Frühkretische Siegel*, p. 232. His conclusion that the Vattina culture is partly contemporary with the Second Period in Thessaly is plainly impossible. The sherd cited really discloses the existence of an otherwise unsuspected south-eastern prototype for the ornament.

<sup>10</sup> *op. cit.*, p. 35.

<sup>11</sup> Cf. Xanthudides, *op. cit.*, pl. lvii, 486.

<sup>12</sup> *Urgeschichte*, p. 392.

<sup>13</sup> Cf. Götze, *Real.* ii, p. 172.

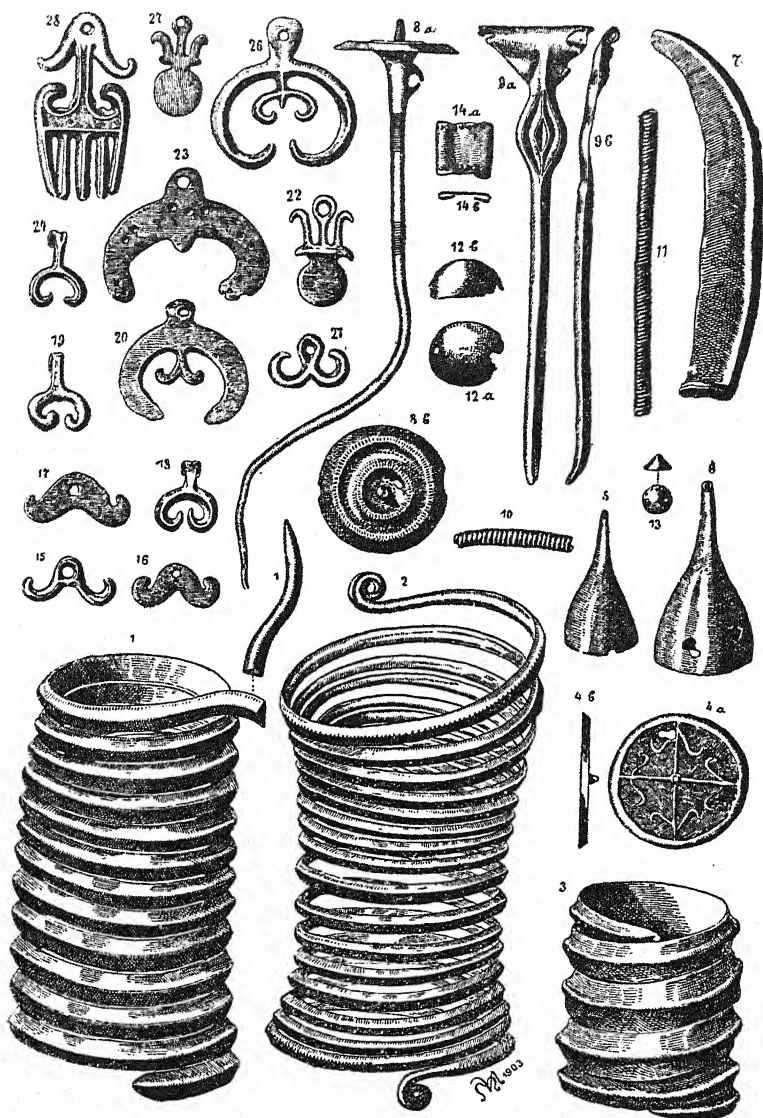


FIG. 149. Hoard of pendants and pins from Nagy Hango, after *AE.*

produced in the northern<sup>1</sup> industrial province, with their graceful curvilinear patterns (Fig. 147). The bronze-worker had no hardened steel tool to engrave with. It is hardly conceivable that these wonderful sweeping curves could have been produced with punch and hammer.<sup>2</sup> Hence we incline to Götze's<sup>3</sup> view that the objects in question were manufactured by the *cire perdue* process and that the patterns were incised in the wax model.

Hoernes<sup>4</sup> calls this style 'Mycenaeanizing', and Vassits<sup>5</sup> has shown how some of the motives have Mycenaean pedigrees. The writer, while admitting the fructifying influence of the Aegean on its evolution, regards it as essentially rooted in the Danubian tradition. In any case Reinecke's comparison with the curvilinear patterns on bronze vessels belonging to the end of the local Bronze Age in Scandinavia is somewhat wide of the mark.

*Embossing* For the ornamentation of bronze ribbons and plaques or thin gold disks a rough sort of embossing with a punch was resorted to as in the Early Bronze Age. The patterns are, however, now, as a rule, curvilinear. The circular plaques from Ottlaka (County Arad)<sup>6</sup> are fine examples of the style current in the south-eastern province at a later date.

We may now examine the several groups in greater detail.

## II. THE LOCAL GROUPS

### 1. *Lovasberény-Vatya Group.*

Group 1 extends from the northern slopes of the Bakony across the Danube at least as far as the Tisza, occupying Fejér and Pest Counties. The most important cemeteries are at Lovasberény,<sup>7</sup> Dunakeszi,<sup>8</sup> Ócsa,<sup>9</sup> Soroksár,<sup>10</sup> Vatya,<sup>11</sup> Izsák,<sup>12</sup> Dömsöd,<sup>13</sup> and Dunapentele.<sup>14</sup> To these should probably be added urnfields listed by Wosinski<sup>15</sup> as yielding Pannonian ware, such as Duna-Almás (Komaron), Bakony-Romand, and Bölcske (Tolna).

*The urns* The distinctive urns are pitcher-forms with relatively long

<sup>1</sup> Zoltai, *Man*, xxvi. 84.

<sup>2</sup> Hoernes, *l. c.*, p. 392.

<sup>3</sup> *Real.* ii, p. 154; the stone moulds found in the settlements would on this view be designed only for forming the wax models.

<sup>4</sup> *op. cit.*, p. 403.

<sup>5</sup> *Starinar*, 1906, pp. 10 f.

<sup>6</sup> *AE.* xxix (1909), pp. 409 ff.

<sup>7</sup> *AE.* xvii, pp. 305 f.; xviii, pp. 320 ff.

<sup>8</sup> Nagy, *Budapest*, pp. 130 f. The types here look distinctly late.

<sup>9</sup> *AE.* xvii, p. 259, close to Alsó Nemedi.

<sup>10</sup> Wosinski, *Ink. Ker.*, pl. LXVII.

<sup>11</sup> *AE.* xxix, pp. 125 ff.

<sup>12</sup> M. Kecskemét.

<sup>13</sup> Excavated in May 1928.

<sup>14</sup> *PZ.* xi, pp. 118 ff.

<sup>15</sup> *Ink. Ker.*, pp. 45, 46, and 50.

trumpet-like necks (Fig. 150). They are provided with one, two, or even more handles, either joining neck and shoulder, sitting on the shoulder, or, more rarely, on the belly. They

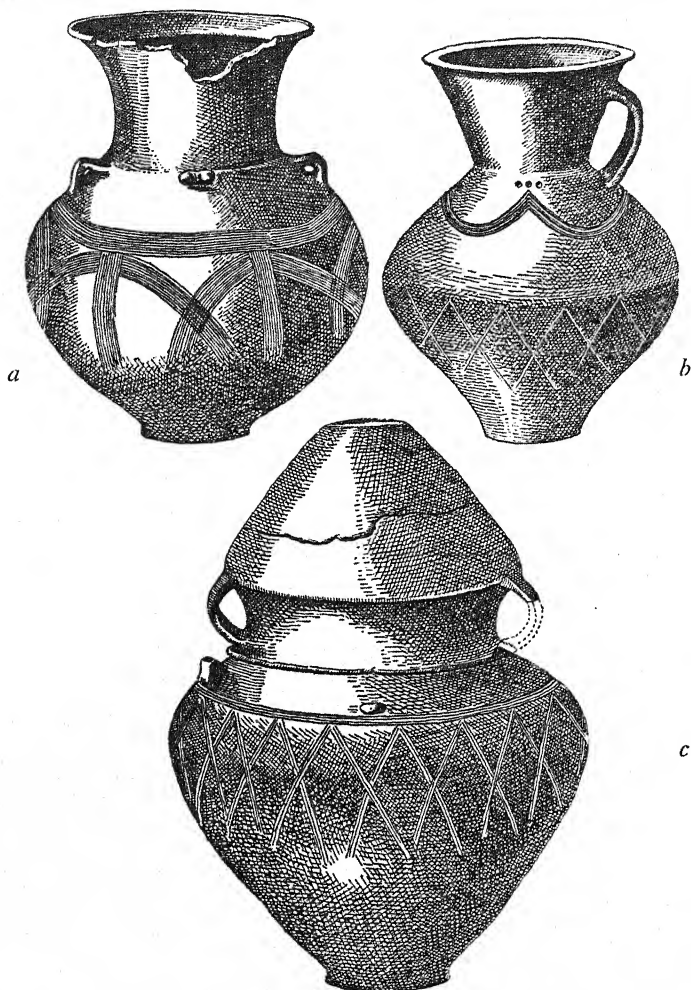


FIG. 150. Urns from Lovasberény, after *AE.*  $\frac{1}{5}$

may be decorated with grooved patterns, with a plastic rope ornament round the belly, and by roughening the lower half. The ancestry of the pitchers that stand at the head of the series is disclosed in the large jar recently discovered in the Early Bronze Age settlement at Oszentiván (Fig. 127).<sup>1</sup>

<sup>1</sup> It reproduces not only the form (especially the trumpet neck) but also the plastic rope ornament and the roughened base: cf. p. 221 above.

*Descended  
from  
Early  
Bronze  
Age types*



A rarer form, represented at Lovasberény,<sup>1</sup> Izsák, and elsewhere, has an ovoid body and a short trumpet neck. It is very common in the crusted ware of Tolna County<sup>2</sup> where diminutive specimens (Fig. 153 a) were manufactured. The same type occurs sporadically even north of the Bakony. It, too, goes back to local types current in the Early Bronze Age—in this case the ovoid amphora represented in Tószeg A. At Soroksár<sup>3</sup> one ossuary was a pillar urn of hour-glass form, like that from Surčín shown in Fig. 155. Here we have a development of the Gáta mug influenced by the larger vessels just described. Finally, urns belonging to group 2, exactly like Fig. 156 f in shape but ornamented in the excised style of group 1 (as at Harcz), were used as ossuaries at Izsák.

Cover  
dishes

The urns were covered with various sorts of dishes and bowls. The most distinctive was deep, with a distinct neck and wide brim: it may be decorated with radial grooves<sup>4</sup> or in Pannonian style as in group 2.<sup>5</sup> It is certainly derived from the analogous dishes of the Perjámos, Tószeg B, and Bell-beaker cultures. Another form is a crater with two vertical handles reminiscent of Mycenaean and Cypro-Mycenaean types (Fig. 150 c),<sup>6</sup> but traceable to the same local prototypes. In the cemeteries round Kecskemét, Tószeg dishes with wart ornament (like Fig. 163) were also used occasionally. The same cemeteries and Dunakeszi have yielded broad-rimmed oval dishes such as occur very frequently at Egyek on the Upper Tisza. These are ultimately descended from the Early Bronze Age dish found at Nagy Rév.<sup>7</sup>

Panno-  
nian  
ware

Accessory vases are very varied. The most interesting belong to the fabric termed Pannonian ware. Outside the urnfields, this fabric is found in great abundance in the settlements of Tolna County, notably Harcz, Kölesd, Lengyel, and Szekszard, and it seems to have been manufactured in that region. But it was diffused right over the Little Alföld too. Imported vases of the same fabric have been found east of the Tisza at Szelevény and Szentes,<sup>8</sup> in the C levels of Tószeg,<sup>9</sup> at Mohi Pusztá and Szihalom on the Slovakian border, near Detva in Slovakia (Zvolen),<sup>10</sup> and in the Lausitz urnfield of Bělov in Moravia.<sup>11</sup>

<sup>1</sup> *AE.* xvii, p. 313, fig. 25.

<sup>2</sup> Wosinski, *Ink. Ker.*, pls. XLVI, XLVII, LV, LVII.

<sup>3</sup> Hampel, pl. LXXVII, 1.

<sup>4</sup> Lovasberény, Válya.

<sup>5</sup> Dunakeszi, Soroksár.

<sup>6</sup> Forsdyke, *Cat.*, pl. xi, A 874.

<sup>7</sup> p. 217 above.

<sup>8</sup> Wosinski, *op. cit.*, pl. LXXIII.

<sup>9</sup> *Jelentés a M.N. Muz. 1907 évi*, p. 179, fig. 26, 2.

<sup>10</sup> M. Turč. Sv. Martin.

<sup>11</sup> Verbal information from Dr. Červinka.



Pannonian ware is one of the finest of prehistoric pot fabrics. The surface is generally slipped, its colour varying from orange to black. Apart from the urns which are found in all sizes, the curious waisted jugs and cups are the most distinctive shapes. In the jugs (Fig. 153 b) the band handle starts from the rim and is often indented at the junction. The form is obviously derived from the Slovakian group of Early Bronze Age mugs represented at Veselé where the *omphalos* base already occurs (Fig. 141); an intermediate form is represented in the inhumation grave at Bene near Kecskemét. The shallower cup with the handle bridging the waist (Fig. 154 a) can just as easily be derived from Gáta forms. In addition multiple vases (Fig. 154 c), rattles, theriomorphs, and various quaint shapes were manufactured in Pannonian ware.

Technique

Shapes

Triple  
vases  
Rattles

The decoration of Pannonian ware is still more distinctive than the shapes; it is effected by fine furrowing, excision, and impression, all used side by side. Groups of concentric circles linked by incised lines play a prominent part in the decoration. In these schemes the influence of metal-work may easily be recognized,<sup>1</sup> though the concentric circle had already made its appearance on the bell-beakers from Tököl. Another important motive specially popular in Tolna County was the W figure; it recurs, combined with concentric circles, in Period VI at Maria Rast in Styria.<sup>2</sup> With the stamped and incised motives were combined broad, excised bands. This technique, the Harcz style, must be directly descended from the Slavonian ware that had flourished a little farther south.<sup>3</sup> The incised lines, stamped circles, and excised strips<sup>4</sup> were all heavily incrustated with a white substance, shown by Wosinski's analyses<sup>5</sup> to consist of burnt bone.

Orna-  
ment

In addition to the Pannonian ware the urnfields of Dunapentele and Vátya contained cord-ornamented cups. Finally, fluted cups (like Fig. 185 b below) from a few graves confirm the impression created by the Hallstatt analogies to Pannonian motives that the urnfields in question lasted in use into phase D.

Cord or-  
nament

The metal furniture is relatively poor, and looks extraordinarily primitive. The only weapons<sup>6</sup> detected are some

Daggers

<sup>1</sup> Very close parallels are to be seen on Hallstatt girdle plates, e.g. *PBL*. 1891, pl. II.

<sup>2</sup> Much, *Kunsthist. Atlas*, pl. XL, 10.

<sup>3</sup> Behrens alone has clearly recognized this generic kinship, *PZ*. xi-xii, p. 123.

<sup>4</sup> The bottoms of these were specially prepared by rubbing, to receive the white mass.

<sup>5</sup> *Ink. Ker.*, p. 24.

<sup>6</sup> G. Nagy illustrates a socketed celt as coming from the urnfield of Duna-keszi (*op. cit.*, p. 136).

primitive flat daggers of types A<sub>1</sub>, B<sub>1</sub>, and B<sub>2</sub>, from Vátya.<sup>1</sup> Battle-axes are never found in graves, and are exceptional in the whole area occupied by cemeteries of group I.

*Pins* Ornaments were more plentiful. The pins are mostly Early Bronze Age in type. A<sub>0</sub> is found everywhere; the primitive knot-headed pin, B<sub>1</sub>, at Vátya (twice),<sup>1</sup> B<sub>4</sub> at Lovasberény<sup>2</sup> and Dunapentele;<sup>3</sup> A<sub>5</sub> at Lovasberény, Dunakeszi, Dunapentele, and Vátya; B<sub>2</sub> at Lovasberény and Izsák. But the really

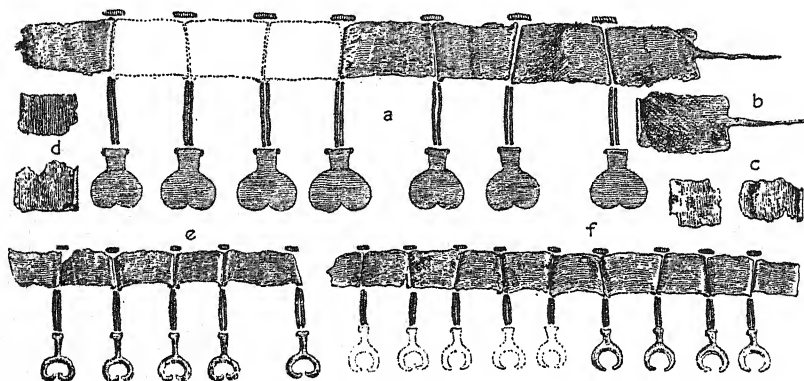


FIG. 151. Belt from Ercsi reconstructed after Hampel.  $\frac{1}{2}$

typical pin at all sites was A<sub>4</sub> and variations thereon, e.g. B<sub>3</sub>. All these types can be paralleled more or less exactly in the Aunjetitz graves of the Early Bronze Age. However, Vátya has yielded examples of C<sub>3</sub> and B<sub>6</sub>.<sup>4</sup>

*Pendants* As pendants B<sub>0</sub>,<sup>5</sup> B<sub>2</sub>,<sup>5,6</sup> B<sub>1</sub>,<sup>6</sup> and B<sub>3</sub><sup>7</sup> were worn. Spirals of forms D<sub>1</sub> and D<sub>5</sub> were stuck in the ears. The arms  
*Bracelets* might be decked with bracelets B<sub>1</sub><sup>7</sup> and C<sub>2</sub>.<sup>6</sup> One person buried at Lovasberény must have worn an ingot torque (A<sub>1</sub>).  
*Girdle ornaments* The girdle was studded with hollow bronze or gold<sup>6</sup> buttons or tutuli like A<sub>0</sub>,<sup>6</sup> but a narrow girdle of hammered bronze comes from Lovasberény.<sup>8</sup> Everywhere plaques of thin bronze-leaf rolled up at each end were freely used for hanging on girdles or on necklaces; the probable arrangement is shown in Fig. 151. For the latter purpose precious substances were imported from afar; the Baltic or Transylvania supplied

<sup>1</sup> None of the Vátya bronzes have been published; they are to be seen at Kecskemét.

<sup>2</sup> The bronzes from Lovasberény are illustrated in *AE.* xviii, p. 329.

<sup>3</sup> *PZ.* xi, *l.c.*

<sup>4</sup> Also at Dunakeszi.

<sup>5</sup> Dunapentele.

<sup>6</sup> Vátya.

<sup>7</sup> Lovasberény.

<sup>8</sup> *AE.* xvii, p. 304, fig. 1.

amber;<sup>1</sup> the Eastern Mediterranean small beads of bluish green fayence, cylindrical or in the shape of a four-pointed star,<sup>2</sup> and marine mussel shells.<sup>3</sup> Bored teeth were also worn.

It is uncertain whether the beehive pit-dwellings from Lengyel belong to this phase. More probably they were dug by Hallstatt people in the Sub-Atlantic epoch. And most of the horn-shaped firedogs<sup>4</sup> must belong to that period. But some may be truly 'Bronze Age', and so constitute links between the earlier specimens from Kovacshalom and the Late Bronze Age

Amber

Paste  
beads

Dwellings

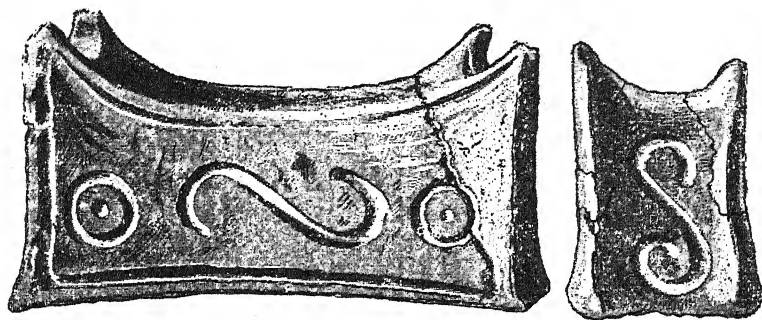


FIG. 152. Fire dog from Lengyel, after Wosinski.  $\frac{1}{3}$

series from the Upper Danube and Switzerland; typologically Fig. 152 shows an early form.

Kossinna would derive the culture just described from that of Aunjetitz, pointing to the agreement of the bronzes.<sup>5</sup> It would be possible to supplement his arguments by citing the cups which may be attached to Aunjetitz, or rather Gáta and Veselé, types. His conclusion is none the less false. The culture just described is a development of the native Early Bronze Age culture, the remains of which are still insufficiently known locally, but which, as we saw, rested on the same foundation as the contemporary civilizations of Bohemia and Moravia.

Affinities:  
Kossinna's  
theory

<sup>1</sup> Large spherical beads found at Vatyá; Bölske in Tolna (Wosinski, *Ink. Ker.*, p. 50; *TT.*, p. 396).

<sup>2</sup> Found at Vatyá and in the settlement of Kemenytétő near Tiszaug. The star is about 0.5 cm. from point to point: the colour is very pale, and no glaze remains. Four-pointed beads of stone from the cist graves of Naxos and others in fayence from Helladic cists at Sesklo are in Athens (Nos. 6203 and 5908). Cf. also, Brunton, *Badarian*

*Civ.*, pl. XLIX; 73 A. In clay the form appeared with painted pottery at Sátorajújhely (cf. p. 106 above), and gold examples were found with the cups of fig. 206 in the Late Bronze Age hoard of Buda-Pest-Angyalföld. Cf. the Serbian gold beads cited on p. 275, n. 8.

<sup>3</sup> Dunapentele, *PZ.* xi, p. 120 (species not determined).

<sup>4</sup> Wosinski, *Lengyel*, figs. 206-9.

<sup>5</sup> *ZfE.* xxxiv (1902), p. 211.

Origin in  
Hungary

The proof of this derivation is afforded in the first instance by the urns; no possible prototype for these exists within the sphere of the Aunjetitz culture, whereas the lucky find at Ószentiván reveals their immediate ancestry.<sup>1</sup> Secondly, the decoration is essentially native to the Middle Danube plain. The bronzes, derived from the common oriental heritage of the two groups (the daggers, the pin A1, the torque A1, the pendant spiral A1), all represent 'Hungarian' developments thereof.<sup>2</sup>

## 2. *Bijelo brdo Group.*

*Urns* Group 2 occupies the adjacent territory on both sides of the Danube and the Save. The characteristic urn is the two-storied form shown in Fig. 156 f, and may be regarded as a specialized variant of that current in group 3. It may be covered with a dish similar in form to that used in group 1 but decorated in the native style. The other forms are allied to Pannonian shapes (Fig. 156 a).

The decoration resembles that current farther north in the use of finely furrowed lines and concentric circles, but the lines are sometimes curved, and neither excision nor W figures were employed.

Urns like Fig. 156 f are characteristic of the cemeteries of Szeremle,<sup>3</sup> Kiskőszeg,<sup>4</sup> Maria Almás,<sup>4</sup> and Vörösmart<sup>4</sup> in Dunantul, Erdut,<sup>5</sup> and Bijelo brdo<sup>6</sup> in eastern Slavonia and Temes Kubin<sup>7</sup> and Dubovac in the Banat, and occur even below the Iron Gates.<sup>8</sup> An analogous form, but decorated by excision, served as the ossuary in one grave at Izsák.<sup>9</sup> The distinctive lid is found in many of the cemeteries of group 4 round Vršac and as far north as Soroksár in a cemetery of group 1.<sup>10</sup> At Surčin in Syrmia an urn of Soroksár type (Fig. 155) was found.

Cases of  
inhuma-  
tion

The urns do not always contain cremated remains; in one grave at Bijelo brdo and generally at Szeremle<sup>11</sup> they accompanied contracted skeletons.

<sup>1</sup> Among the Trojan pithoi are many varieties that may be connected with our urns; e.g. *SS.* Nos. 2489, 2491, 2497, 2508. Remoter parallels from the Minoan world (e.g. *JHS.* xlv, p. 17, fig. 19) might be multiplied indefinitely. But note especially Dörpfeld, *Alt-Ithaka*, Beilage 67 (E.H.).

<sup>2</sup> Cf. p. 235 above.

<sup>3</sup> *Wosinski, Ink. Ker.*, pls. LXVII f.

<sup>4</sup> *Naturhistor. Museum, Vienna.*

<sup>5</sup> *Vjes HAD.* vi, p. 185.

<sup>6</sup> *Ibid.* vii, p. 63.

<sup>7</sup> *Wosinski, op. cit.*, pl. xci.

<sup>8</sup> At Balta-Verde near Turnu-Severin; *Dacia*, i, p. 294, fig. 260.

<sup>9</sup> *M. Kecskemét.*

<sup>10</sup> *Wosinski, ibid.*, pl. LXVII. 2.

<sup>11</sup> *Ibid.*, p. 55.

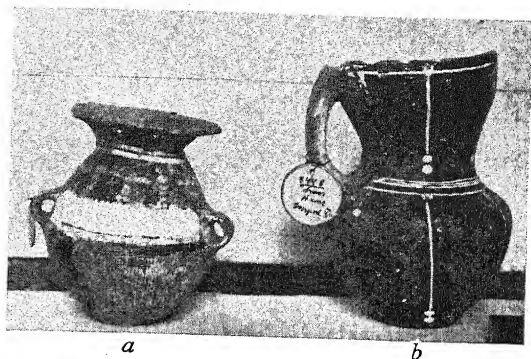


FIG. 153. Pannonian ware, Harcz. M. Szekszard

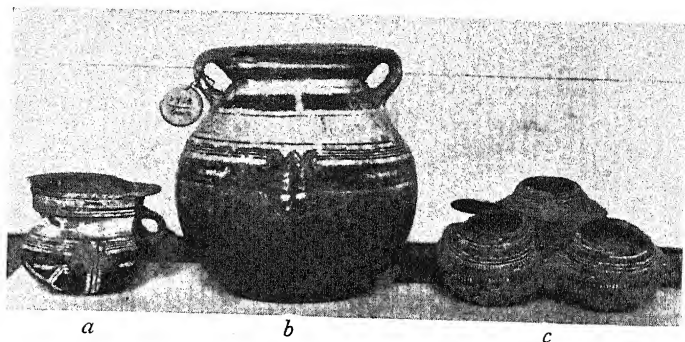


FIG. 154. Pannonian ware, Harcz. M. Szekszard

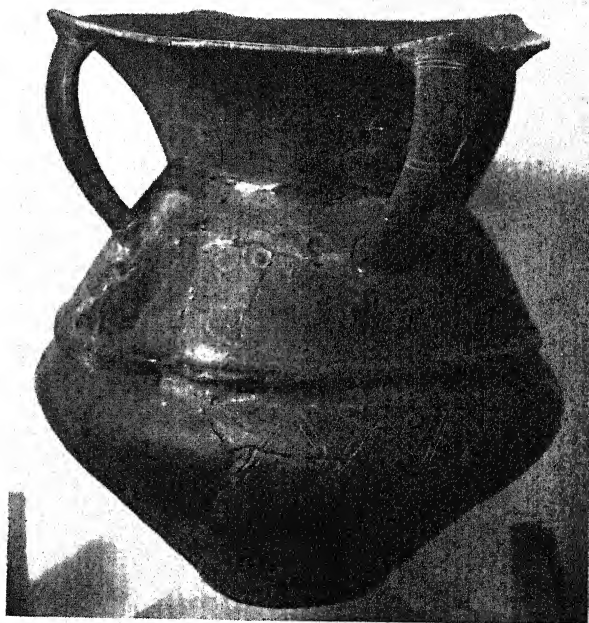


FIG. 155. Urn of Soroksár type from Surčin. M. Zagreb.  $\frac{1}{4}$

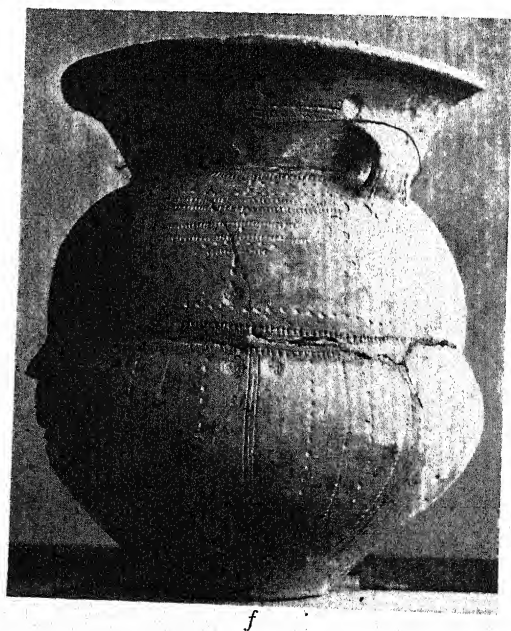
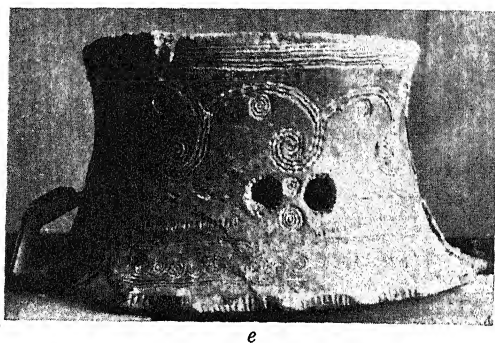
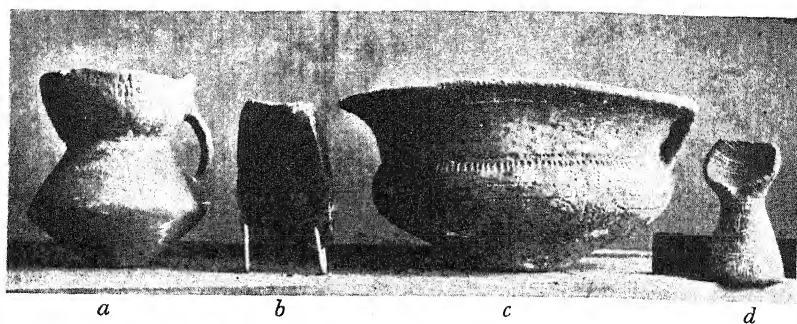


FIG. 156. Furniture of cremation grave from Temes-Kubin. M. Szombathely



Stone celts and axes are quite common in settlements of this group, and at Temes Kubin a finely-polished stone celt was actually deposited in a grave (Fig. 156). However, a bronze axe of type A2 was found at Kiskőszeg (? in a grave). Arrows were sometimes tipped with triangular metal points fastened to the shaft by thongs passing through slits.<sup>1</sup> Judging from the furniture of grave 121 at Bijelo brdo pin B5 and bracelet C1 were characteristic of this group; the usual spiral ear-rings of gold or bronze were also worn.<sup>2</sup> Perhaps the authors of this group, like their neighbours farther east, manufactured clay models of women and animals; the Babska statuette<sup>3</sup> was found in the area and a figurine is included in the furniture of the grave at Temes Kubin. Theriomorphic rattles were found at Soroksár and elsewhere.

Stone  
celts  
Weapons  
Orna-  
ments  
Clay  
models

### 3. *The Kličevac Group.*

To the east group 2 passes over almost insensibly into the Kličevac group. Types of both groups are actually mingled at Temes Kubin, e.g. in the grave group illustrated in Fig. 156. The type site is the urnfield of Kličevac in North Serbia.<sup>3</sup> But the same ware is represented in the upper strata at Vinča and in the settlements of Kurvin Grad<sup>4</sup> and Zhuto brdo<sup>5</sup> in the same region, on the north bank of the Danube in the cemeteries of Temes Kubin, Palanka, and Dubovac, and at Gradac in the Morava valley.<sup>6</sup> Thence it extends below the Iron Gates to Orsova and Vidin.<sup>7</sup>

The urns in group 3 are globular and equipped with four handles on the belly (Fig. 157, a and c). The type, like the more piriform variant noted in group 1, might be derived from the jars found in Tószeg A, but the influence of the Banat corded urns and of Minoan metal vases is discernible. The cover-dishes resemble those of groups 1 and 2 (Fig. 157, b and d). Hollow ring-stands with crinkled rims (Fig. 156 d) are very distinctive. A jar in the Nemzeti Muzeum has interesting Hercynian analogues.

Urns

The technique employed for the decoration of these vases is the same as in group 2. But the stamped circles are rather larger and the furrowed lines are grouped together to form ribbons; fretwork is not unknown, and red matter sometimes takes the place of white in the incrustation.

<sup>1</sup> Bijelo brdo, Grave 121; *Dawn*, fig. 95.

<sup>2</sup> Hoernes, *Urgeschichte*, p. 409, 1.

<sup>3</sup> *Rev. Arch.* 1902, pp. 172 ff.

<sup>4</sup> Cf. map in *Starinar*, 1910, pl. 1.

<sup>5</sup> *Starinar*, 1907, pp. 1 ff.

<sup>6</sup> Casson, *Macedonia*, p. 118.

<sup>7</sup> e.g. *Dacia*, 1, pp. 280 f.



*Spiral and maeander patterns*  
*Heraldic groups*

The ribbons often form spiral or maeander figures; the stamped circles are grouped to form stars or rosettes. A constantly recurring theme is the heraldic group (Fig. 157 c). Behind the conventionalization lies some Aegean motive—the Mycenaean pillar with its guardian deities or the Potnia Thērōn and her attendants.<sup>1</sup> On the jar in the Nemzeti Múzeum we see a human face on the neck and a curious pectiform sign on the body. Sherds from Kličevac and Zhuto brdo present a degraded version of the Late Mycenaean lily,<sup>2</sup> a motive that was also engraved on battle-axes. Even to-day it appears in an identical form on peasant embroideries. But if many designs presuppose textile models, a sherd from Zhuto brdo,<sup>3</sup> adorned with a row of stamped SS, is an instance of copying metal work that only a Middle Minoan potter could rival.<sup>4</sup>

*Clay figurines*

Clay statuettes<sup>5</sup> are very common on sites of group 3 as well as on some adjacent sites of groups 2 and 4. The goddess is always now represented clothed in a bodice and wearing a bell-shaped flounced skirt, reminiscent of Minoan fashions, and decked with bangles and pendants.<sup>6</sup> The patterns woven in the stuff of the skirt are faithfully reproduced and include the swastika<sup>7</sup> and other symbols. But the artist has paid little attention to the human form behind these trappings. The features are undistinguishable and the bust is little better than a concave disk. Below the Iron Gates at Orsova<sup>8</sup> the conventional flattening has produced a type that has been wrongly compared to the Cycladic 'frying-pans', but does really resemble the Maltese figures of the Bronze Age.<sup>9</sup>

*Other models*

In addition to the figurines, model thrones,<sup>10</sup> clay models of battle-axes,<sup>11</sup> and other 'ritual' objects were manufactured and often deposited in the graves.

*Metal*

Apart from an ogival dagger of type B2 from Kličevac<sup>12</sup> no metal objects have been identified from graves of this group. Chance finds include a battle-axe of type A2, spiral lock-rings

<sup>1</sup> Vassits, *Rev. Arch.* 1902, p. 185.

<sup>2</sup> Vassits, *Starinar*, 1906, pp. 10 f.

<sup>3</sup> *Starinar*, 1910, pl. II, 9.

<sup>4</sup> Cf. Evans, *Palace*, fig. 182, 6.

<sup>5</sup> The finest is that from Kličevac, so often reproduced, e.g. Wosinski, *Ink. Ker.*, pls. crv and cv; Hoernes, *Urg.*, p. 409; Childe, *Dawn*, fig. 94. Cf. *Starinar*, 1924, pl. 1, for a new specimen from the Banat.

<sup>6</sup> The concentric circles may represent tutuli of type A2: in the Babska

figurine a necklace of heart-shaped pendants is indicated.

<sup>7</sup> Wosinski, *Ink. Ker.*, pl. xcii.

<sup>8</sup> Hoernes, *Urgesch.*, p. 411; Wosinski, *Ink. Ker.*, pl. ci.

<sup>9</sup> *Archaeologia*, lxvii (1916), pl. xviii.

<sup>10</sup> *Rev. Arch.* 1902, figs. 19–22 (Kličevac).

<sup>11</sup> *Starinar*, 1910, pl. vi, 42 (Kurvin Grad).

<sup>12</sup> *Starinar*, 1906, p. 19, fig. 8.

of type 2, and fragments of iron from Zhuto brdo, a celt of type C2 from Vinča, and the mould for a socketed celt C4 from Kurvin Grad.<sup>1</sup> Stone celts and axes were not uncommon. Very interesting are two stray fibulae from Vinča, one of the simplest violin-bow type, the other the Mycenaean form with flat leaf-shaped bow. Both must have come from the Aegean up the Vardar.

In the civilization of group 3 the old Danubian substratum lives on more distinctly than anywhere else. The spiral ornament, the figurines, and the ritual models are all descended from neolithic stocks. The analogy of the Kličevac spirals and maeanders and the shape of the typical urn to those from pre-Mycenaean levels in the Vardar valley<sup>2</sup> suggests that the culture from which Kličevac is sprung occupied the whole Central Balkan area. Its southern extension was perhaps already overlaid with a veneer of Mycenaean culture. North of the Balkans only reflexions thereof appear. But the fibula from Vinča confirms inferences based upon patterns and costumes: Aegean influence was still coming down the Morava. North Serbia was still fulfilling its old role in Aegean-Danubian commerce.

#### 4. *The Vattina Culture.*

The fourth group is represented by the settlements and cemeteries of Vattina and the allied sites of Vršac, Tolvadia, Temes Nagyfalú, and Munar Szt. Petre. Provisionally the Nagy Sác near Pécska may be attached to this group as well as Surčin in Syrmia. Here the material from the settlements has at least been collected and published, however imperfect the excavation. We thus get a fuller picture of the whole culture. But we must recall that Vattina was a long-lived settlement, like Tószeg and Nagy Sác, but not stratigraphically excavated.

The most distinctive urn here was the corded amphora described on p. 266, Fig. 146, c. In the later specimens the normal horizontal cord-impression gives place to incrustated curvilinear motives joining the handles and little pot-hook spirals between them. Possibly this developed cord-ornament reacted on the evolution of the Kličevac technique, but the

<sup>1</sup> *Starinar*, 1910, p. 3, and pl. III, 12. It may well be later than the urns.

<sup>2</sup> Heurtley, *Ant. J.* vii (1927), p. 47: note the urns of fig. 6 from Vardarovtsa Ic. In the formation of the type we recognized the influence of

Cretan ritual vessels as in *JHS.* xlv (1925), p. 17, figs. 19-20. Note that analogous forms recur at Lovasberény and elsewhere in group 1 (*AE.* xviii, p. 321, fig. 6).

'Dan-  
bian'  
survi

Urns

new patterns are inspired by the southern group. The later Vattina urns may have developed out of the corded amphorae (Fig. 146, a). Parallel series evolved from the same roots at Surčin.<sup>1</sup> Bijelo brdo urns were also used in the Vršac district and lids of group 2 were quite common.

*Trojan survivals* In the domestic pottery from Vattina and Pécska many types are reminiscent of Troy and the Aegean. Most remarkable are lids like Fig. 161, c,<sup>2</sup> the pyxides with arc ornamentation on the shoulder<sup>3</sup> and their broad-rimmed, cylindrical lids,<sup>4</sup> candlesticks, theriomorphs representing swine,<sup>5</sup> and twin vases (Fig. 161, a). There are also some fine pedestalled bowls to show the survival of Danubian II traditions. The ornament includes little spiral figures with Danubian antecedents but Trojan and Macedonian analogues.<sup>6</sup> The variant of the Perjámos jug with the handles rising above the rim shown in Fig. 159 would be characteristic of the C levels at Pécska on the Maros.

*Figurines* Figurines were rare,<sup>7</sup> but a clay phallos<sup>8</sup> with parallels in Bulgaria, Anatolia, and Crete should be noted.

*Continued use of stone* Pécska and Vattina were villages where trade and industry flourished. Stone celts, axes, and mace-heads were indeed still made;<sup>9</sup> and horn was used for mattocks and many smaller utensils, while flint and obsidian were imported for the manu-

*Metal-lurgy* manufacture of knives and scrapers. But metal was worked locally, as the moulds from Vattina and Pécska prove. Flat chisels, *Tools and weapons* celts of types E1<sup>10</sup> and C1,<sup>11</sup> single-bladed axes of type C2 and round-backed knives served as tools. The warrior used ogival daggers of type B1-2,<sup>12</sup> battle-axes of type A1<sup>13</sup> and A2,<sup>14</sup> socketed spear-heads with leaf-blades,<sup>15</sup> and arrows with barbless bone points.

*Harpoons* The fishermen caught their prey with horn harpoon-heads *Bits* of Tószeg type. The horse was domesticated and controlled by bits fixed into horn cheek-pieces as at Tószeg (Fig. 160).

*Pins* The distinctive pin of group 4 was B11, found both at Vattina and Surčin, but B2 (as in group 1), B5 (as in group 2),

<sup>1</sup> Material at Zagreb.

<sup>2</sup> *Vattina*, pl. XI, 8-9; *Dolgozatok*, iii, fig. 24; cf. *SS.*, no. 1962 and p. 234 above.

<sup>3</sup> *Vattina*, pl. XII, 1; *Dolgozatok*, fig. 18; cf. *Ilios*, p. 403, no. 303.

<sup>4</sup> *Dolgozatok*, figs. 32 and 43; *Vattina*, pl. XII, 3; cf. *SS.*, no. 2356.

<sup>5</sup> *Vattina*, pl. XIX, 5.

<sup>6</sup> *Vattina*, pl. XX, 2: *Ink. Ker.*, pl. LXXXIV; cf. *SS.*, no. 2470; *Rey, Macé-*

*doine*, pl. XXI, 2.

<sup>7</sup> *Vattina*, pl. XIX, 1; cf. pl. IV, 6.

<sup>8</sup> *Vattina*, pl. XXIII, 1.

<sup>9</sup> *Ibid.*, pl. III, 2-4.

<sup>10</sup> Vršac, *Arch. Köz.* xx, pl. I, 4.

<sup>11</sup> Temes Nagyfalu hoard.

<sup>12</sup> *Arch. Köz.*, pl. I, 1.

<sup>13</sup> *Ibid.*, pl. I, 12; another in the hoard of Temes Nagyfalu.

<sup>14</sup> *Vattina* and Surčin.

<sup>15</sup> *Vattina*, pl. II, 4.

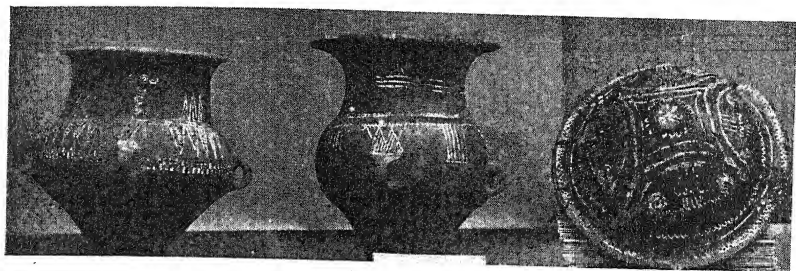


FIG. 157. Urns and lid from Dubovac. M. Vršac.  $\frac{1}{10}$

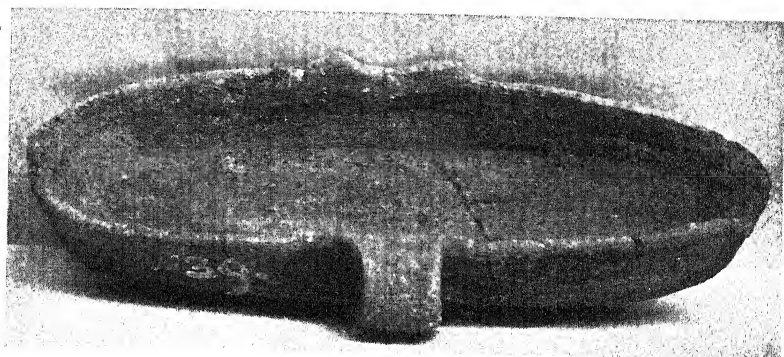


FIG. 158. Dish from Pécska. M. Arad

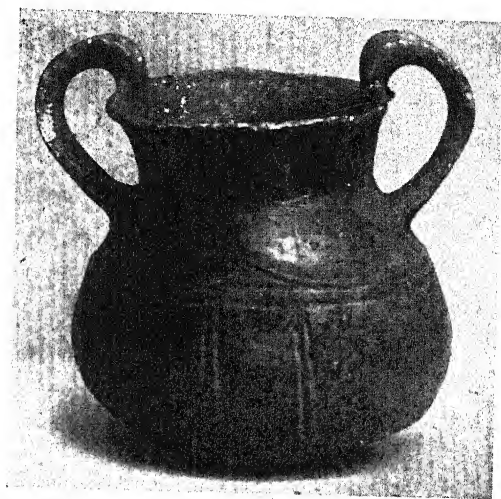


FIG. 159. Tankard from Pécska. M. Arad



C<sub>3</sub>, and B<sub>6</sub> were also worn. The bracelets picked up in the urnfields include F<sub>1</sub>, B<sub>2</sub> (very common), and C<sub>2</sub>. In the hoard at Temes Nagyalú D<sub>4</sub> also occurred. On the necklace and girdle were hung pendants A<sub>0</sub>, B<sub>3</sub>,<sup>1</sup> and B<sub>4</sub>, tutuli A<sub>2</sub>,<sup>2</sup> and B<sub>5</sub>, together with amber beads<sup>3</sup> and shells, including cowries.

Perforated laminae from boars' tusks are common at Vattina and Pécska, and may have fallen from a helmet. A bone disk

*Amber*  
*?Helmets*  
*of boars'*  
*tusks*

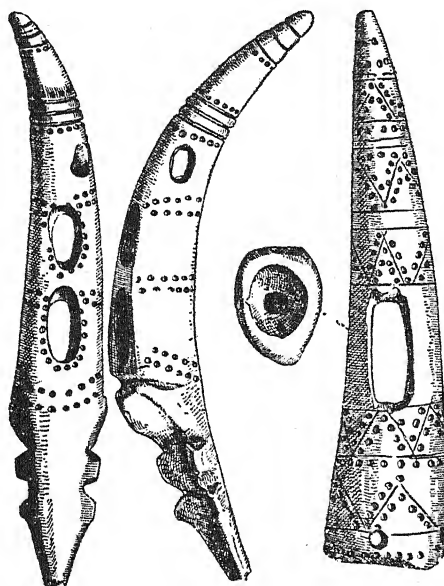


FIG. 160. Horn cheek-piece from a bit, Tiszafüred.  $\frac{2}{3}$

from Vattina<sup>4</sup> recalls the bosses that surmounted such helmets from the Shaft Graves of Mycenae.

Finally, the inhabitants of Vattina may have possessed the rudiments of writing, to judge by the script-like signs incised on a spindle whorl.<sup>5</sup>

*Writing*

The Vattina culture is essentially the offspring of the Danubian and Perjámos cultures dominated by Corded Ware elements. The numerous and startling parallels from Troy are not so much due to direct contact as to the Anatolian elements in the first-named constituent. At the same time the metal

<sup>1</sup> *Arch. Közl.*, l. c., pl. I, 19, 25, 26; *Vattina*, pl. II, 6.

<sup>2</sup> *Vattina*, pl. II, 7 (in a form that Kraft would designate very early).

<sup>3</sup> Milleker considers this amber to

be Transylvanian, not Baltic, *Führer*, p. 14.

<sup>4</sup> Milleker, *Vattina*, pl. II. Cf. Reichel, *Homerische Waffen*, fig. 42.

<sup>5</sup> *Vattina*, pl. XXII, 5.

forms and the cowrie shells show that trade connexion existed between Vattina and the Aegean. On the other hand, the celts and possibly the amber beads were imports from the north.

### 5. *The Tószeg-Egyek Culture.*

The last cultural group in Hungary occupied the Upper Tisza, and is best studied in the C layers of Tószeg. But some of the graves from the great cemeteries of Egyek in County Hajdu certainly, and possibly also the earliest interments in the urn-fields on the flanks of the metalliferous Mátra Mountains—Hatvan, Kisterrene, and Pilin—belong to this epoch; in any case the exploitation of North Hungarian copper was in progress before the invasion from the north that terminates our period.

Wart-  
orna-  
mented  
pottery  
Tószeg  
dish

The distinctive feature of the later Tószeg pottery is revival of decoration by means of smooth conical warts—a motive borrowed from the goldsmith and implying the existence of metal vessels.<sup>1</sup> The most characteristic form is the dish (Fig. 163). Such are found at Egyek in inhumation graves,<sup>2</sup> but also (perhaps in a later form) as covers for cinerary urns. We might assign to the same epoch the oval Egyek dishes with broad rims and peaked handles that were exported to Central Hungary, as well as two-handled cups that occur not only at Pilin<sup>3</sup> but as far west as Dunakeszi<sup>4</sup> in an urnfield of group 1. The dishes with peaked rims standing on an open-work foot from Egyek, Pilin, Dunakeszi, and Gemeinlebarn are also found with skeletons. To the same context as Tószeg belong the long shallow pans generally termed fish-dishes (Fig. 158), the first *ansa lunata* vases, the importations of Pannonian ware, and the 'brush' decoration.<sup>5</sup>

Models  
of  
animals  
Pinta-  
deras

Besides vases these levels at Tószeg contain models of cattle and horses. Similar models were found in large numbers at Pilin.<sup>6</sup> Clay models of axes and *pintaderas* were collected at the latter site. It is less certain whether the bronze miniature celts of types D2 and E6, of swords like Co, socketed spear-heads, button sickles and bracelets<sup>7</sup> from the same site are as old.

Apart from the miniatures, little positive information is available as to the metallurgy of phase C at Tószeg.

<sup>1</sup> Cf. p. 219 above, and p. 330 below.

<sup>2</sup> *Jelentés Debreczen. 1907 évi*, p. 36.

<sup>3</sup> Pič, iii, fig. 15.

<sup>4</sup> Nagy 'Budapest', p. 133.

<sup>5</sup> Made by dabbing the end of a bunch of straws into the wet clay.

<sup>6</sup> Hampel, pl. LXXI.

<sup>7</sup> *Ibid.*, pl. LXX.



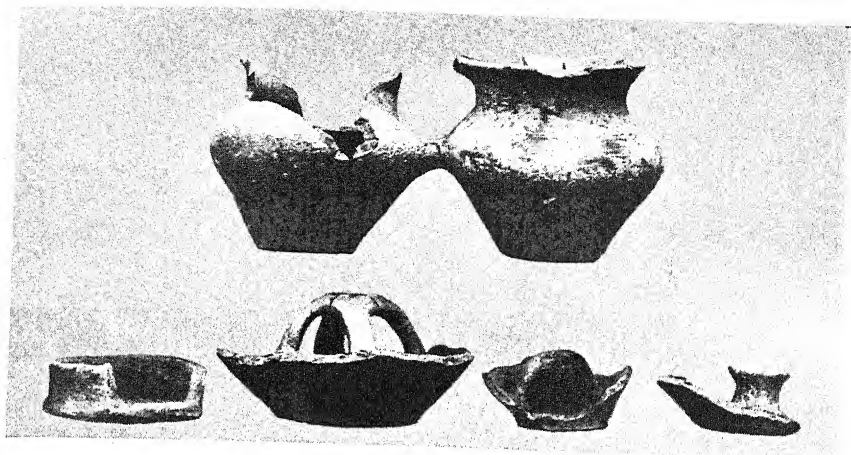


FIG. 161. Twin vases, stand, lids, and candlestick from Vattina. M. Vršac

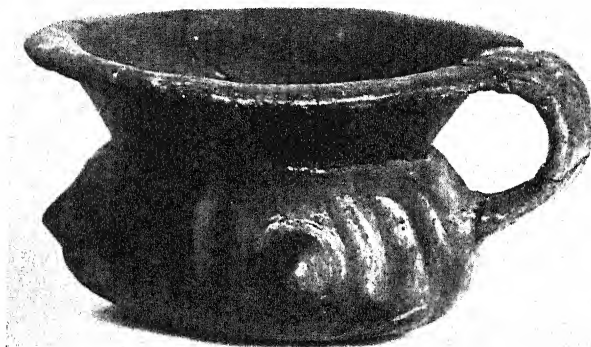


FIG. 162. Cup, Tószeg C. A M. Nemzeti Muzeum



FIG. 163. Dish, Tószeg C. A M. Nemzeti Muzeum



A very distinctive fishing implement belongs to this phase. It is a hollowed antler-tip trimmed to form a spike and perforated for pegging or tying on to the shaft. *Harpoons*

A few amber beads and star-shaped beads of blue paste show that Tószeg shared in the same trade as group 1. *Amber and glass paste*

Tószeg belongs to a chain of similarly situated stations on the Upper Tisza and its tributaries (Szihalom, Tiszafüred, Egyek, &c.), the exploration of which has seldom been altogether satisfactory. Nor have the cemeteries belonging to Tószeg been discovered.<sup>1</sup> However, at Egyek it is certain that the Tószeg dishes and allied types were found with contracted skeletons; the great urnfield belongs on the whole to a later date.

### III. CHRONOLOGY AND ORIGIN OF THE URNFIELD CULTURES

The chronology of the Hungarian urnfields has occasioned fierce controversy. Baron von Miské has assigned all the urnfields to his Late Bronze Age.<sup>2</sup> Reinecke<sup>3</sup> placed the incrustated Pannonian ware in his fourth period. Milleker<sup>4</sup> boldly declares that Vattina belongs to the Hallstatt period, and Vassits<sup>5</sup> inclines to an equally late dating for the Kličevac cultures. Párvan<sup>6</sup> accepts this view as far as Serbia and the Banat are concerned, but admits that the finest Pannonian ware goes back to the Middle Bronze Age.<sup>7</sup>

Plenty of cogent arguments can be adduced in support of the low dating. Except at Gerjen, there are no connected remains west of the Danube apart from the settlements of groups 1 and 2 till the mature Hallstatt culture appears at Tamási, Kiskőszeg, and Dálya; indeed, at Lengyel Hallstatt C pins and Pannonian vases are alike found, though not demonstrably in association. In the Banat, though a later phase of culture than that here described can be interpolated, the Early Iron Age is represented only by a minimal number of Scythian objects and some specifically late gold ornaments. Vassits holds that the Bronze Age strata at Vinča cover the whole period prior to the Celtic occupation. In North-Eastern Hungary the majority of the large cemeteries have admittedly

*Arguments for late dating  
Paucity of Late Bronze Age material*

<sup>1</sup> An urn of group 1 type was, however, discovered in the vicinity by a peasant.

<sup>2</sup> *AfA.* xv (1916), pp. 283 ff., but he has perversely made an Early Bronze Age group out of Simontornya where Pannonian ware and Lovasberény

types appear!

<sup>3</sup> *AE.* xix (1899).

<sup>4</sup> *Vattina*, p. 67.

<sup>5</sup> *PZ.* iii, p. 131; *BSA.* xiv, p. 340.

<sup>6</sup> *Getica*, p. 303.

<sup>7</sup> *Ibid.*, pp. 347, 768.

to be assigned to the latter half of Period VI, though they usually contain bronzes just as primitive as those from Vátya or Bijelo brdo.

*Parallels in Iron Age pottery of Silesia and Hallstatt* Then the actual material from the urnfields has many analogies in Iron Age deposits to the north-west. Theriomorphs, triple vases, and some cups extraordinarily like Pannonian shapes,<sup>1</sup> belong to the Seger's fourth phase of the Silesian urn-field culture. And in the same context appear first swastikas and other patterns that occur on the idols of Temes Kubin. We have already noted the similarity between ceramic designs from Bijelo brdo and those on Hallstatt girdle plates. So the Kličevac-Vršac spirals recall those on Hallstatt C vases from Wies in Styria,<sup>2</sup> and the Pannonian W motive is found, only a little earlier, in the cemetery of Maria Rast. Again, the bordered lozenge motif common at Kličevac recurs on a hollow bronze armlet of Iron Age type found at Kostolac in North Serbia.<sup>3</sup>

*Iron Age amber trade* The amber trade-route along the March, with which the beads from Bölske, Vátya, Tószeg, and Pécska could most naturally be connected, was only in regular use during the Iron Age.<sup>4</sup> And the star-shaped paste beads, despite 'neolithic' prototypes, have analogies at the end of Period VI (Hallstatt A) at Angyalföld.<sup>5</sup> Near the urnfields or settlements themselves we have noticed objects of uncontested Iron Age date though such have never been found in a closed deposit, while the stray finds of gold objects belonging to the Dálya-Fokoru-Michalkovo series attest a certain population on the Lower Maros and in Syrmia during the first Iron Age. On this line of reasoning the urnfields just described would begin near the end of our Period VI and last from 1000 to 600 B.C.

*Arguments for early date Hungarian exports in Middle Bronze Age deposits* On the other hand, Behrens<sup>6</sup> has assigned characteristic graves of our group I to the 'ältere Bronzezeit' (our Period V), and Menghin<sup>7</sup> refers the Vattina culture as a whole to Montelius' II. The typological arguments on which both rely are indeed of little value. Still we shall in fact find that products of Hungarian industry were reaching Silesia and South-West Germany during Period V, and the craftsmen who made them must surely have been our urnfield folk.

The Aegean connexions, moreover, are scarcely compatible with the low chronology of Milleker, Vassits, and Pârvan. As

<sup>1</sup> *SV*. viii, fig. 17.

<sup>2</sup> *MAGW*. xv (1885), pl. ix, 1.

<sup>3</sup> *Starinar*, 1906, pp. 1 f., fig. 3;

*MAGW*. xxxvii, p. (47).

<sup>4</sup> The late hoard from Kurd in Tolna

included 226 amber beads; Hampel, iii, pl. ccxiii.

<sup>5</sup> p. 283 above.

<sup>6</sup> *PZ*. xi-xii, p. 123.

<sup>7</sup> *Urg.*, p. 825.

mentioned above, the pottery from Tószeg D appears in Macedonia intrusively in the eleventh century. The synchronism thus indicated between Upper Tószeg and the later group of urnfields on the one hand and Macedonia in the sub-Mycenaean Age on the other is quite in harmony with the Aegean connexions revealed in the earlier urnfields that we equate with Tószeg C. The Kličevac form of ossuary has very close parallels in the pre-Mycenaean levels of Vardaroftsa on the Vardar, and the Kličevac spirals and maeanders too are very like those of the Macedonian Bronze Age ware.<sup>1</sup> So in Rey's 'incised ware class 2' we have just the same swastikas<sup>2</sup> as on the figure from Temes Kubin, high-handled cups precisely like our Fig. 159,<sup>3</sup> and little spirals thoroughly in the spirit of Vattina.<sup>4</sup> These analogies imply relations, which were not altogether one-sided, along the Morava-Vardar corridor during the fourteenth century, and the Mycenaean fibulae from Vinča confirm that conclusion.

*Aegean  
con-  
nexions:  
Mace-  
donia*

These relations did not stop short at the mouth of the Vardar. In the fourteenth-century Hittite pottery from Boghaz Keui which, according to Frankfort,<sup>5</sup> shows influences from Macedonia, we find a whole series of motives identical with those current in the Banat.<sup>6</sup> Such agreements cannot be written off altogether as chronologically worthless. And when we recall the Trojan parallels to Vattina lids and the Minoan features in Kličevac dress, we shall be less inclined to make Silesian or Styrian analogies a criterion of date.

*Anatolia*

It must be rather admitted that on the Middle Danube the compound vases and theriomorphs that had enjoyed a long popularity in Anatolia, Cyprus, and the Aegean, like the swastikas, were on their way up-stream, and appeared in the northern urnfields at a later date. We should in this case regard the Kličevac culture as continuous and contemporary with the native civilization ruling in Macedonia in Late Minoan times. Tószeg C and the earlier urnfields would thus go back to the fourteenth century, while Tószeg D and the later urnfields would begin at the same time as the culture represented in them burst into Macedonia in the eleventh century.

*Hungary  
reveals  
proto-  
types not  
copies  
of Hall-  
statt  
pottery*

The scheme based on the Aegean connexions, however, involves serious difficulties when relations with Italy come to be

*Italian  
con-  
nexions*

<sup>1</sup> Heurtley, *Ant. J.* vii (1927), p. 47.

<sup>2</sup> Rey, *Macédoine*, ii, fig. 29.

<sup>3</sup> *Ibid.*, pl. iv, 1-3.

<sup>4</sup> *Ibid.*, pl. xxi, 2.

<sup>5</sup> *Studies*, ii, p. 171.

<sup>6</sup> *Ibid.*, fig. 19a; swastika: all the figures painted on the jug of pl. ix, 2, can be paralleled in Kličevac ware.

*Bijelo  
brdo and  
Villanova  
ossuaries*

considered. The Bijelo brdo ossuary, shown by the tomb group of Fig. 156 to be roughly contemporary with Kličevac, must either reveal the prototype of the Villanova ossuary or be copied therefrom. The latter alternative would seem the more likely in view of the wide distribution in Central Europe of the Italian bronze urns and their clay imitations. And in fact the lower half of a bronze vessel, probably of Villanova shape but unornamented, has actually come to light at Dálya near Bijelo brdo.<sup>1</sup> Moreover, in the Banat cemeteries that we regard as late and then all along the Maros we shall meet biconical forms reminiscent of the Villanova ossuary. But if the Bijelo brdo urn copy Italian metal prototypes, the whole complex with which it is connected (i.e. groups 1, 2, 3, 4, and 5) can hardly go back much beyond the eleventh century, i.e. the latter half of Period VI!

*Absence  
of  
Benacci  
I types  
in S. Hun-  
gary*

On the other hand, a prominent school of Italian archaeologists holds that the Villanova culture, like that of the *terremare*, was intrusive in Italy.<sup>2</sup> Perhaps our group 2, sprung from the same complex as the *terremare*, really belonged to proto-Villanovans. If the Bijelo brdo ossuary imitated an Italian original, we should expect to find other unambiguous Italian imports of a comparable age along the Drave and in the Banat. But just in this part of the plain Benacci I types are absolutely missing, though there are plenty on the Upper Tisza.

*Bronze  
and gold  
originals*

At the same time the ossuaries of Figs. 155 and 156f are shapes thoroughly in harmony with the remaining Hungarian forms, that are certainly native, and carry on (e.g. in the trumpet-mouth) a tradition traceable to the Early Bronze Age. No doubt in Syrmia, as in Italy, the pottery has been influenced by metal vessels. But though none of these have as yet been found, they were almost certainly local. Indeed, though the Hungarian pots are as definitely metallic as the Italian, both in form and ornament, the style of the decoration presupposes a different material in the two regions. If the Italian potter copied bronze models, the finer designs of his Hungarian confrere have been taken over from the art of the goldsmith. Hence, with all due reserve, we incline to regard the Bijelo brdo ossuary as the model rather than a copy of the Villanovan. Without disguising the difficulties of such a chronology, difficulties to which we return later, we assign the urnfields

<sup>1</sup> *MAGW.* xxviii (1898), p. (34); *AE.* xvii, p. 386, where Reinecke shows the striking similarity to the urn from

Prenzlauitz (W. Prus.) that is generally regarded as Italian.

<sup>2</sup> Randall-MacIver, *Villanovans*, p. 93.

just described on the whole to the epoch between 1400 and 1000 B.C.

In that case the history of the Middle Danube basin in the Middle Bronze Age would have been somewhat as follows. The urnfield groups would have arisen out of the fusion in different proportions between the original Danubian II-Vinča II populations, Asiatic and Iberic prospectors, and the several waves of 'Nordic' intruders represented by Corded Ware, ochre-graves, and Slavonian culture respectively. The urnfield period seems to open with a westward movement that pushed the Slavonian folk southward into Bosnia and northward into Tolna County (to be absorbed in our group 1), and that may have already carried *terramaricoli* into Italy. Then, in Period VI as we shall see, a considerable incursion from the north would have caused a readjustment of all boundaries. The sword-wielding warriors from the Lausitz would have driven the battle-axe overlords of North Hungary into Transylvania, while others swarmed on to Greece leaving only a weakened remnant in South Hungary and the Banat. But to understand these events we must describe the civilizations that had grown up beyond the Carpathians.

Conclu-  
sion  
History



## THE TUMULUS BRONZE CULTURE

A SECOND great province of Middle and Late Bronze Age civilization occupies the upland region from the Upper Moldau and the Saale right into Central France. The civilization ruling over this wide area exhibits a considerable uniformity, the most distinctive common trait being the erection of a barrow over the grave. At the same time local groups can naturally be distinguished, above all with the aid of the pottery and personal ornaments. The most important groups are as follows<sup>1</sup> (see map VII):

1. Hercynian group in Western Bohemia and the adjoining Oberpfalz and Franconia.
2. Bavarian, principally in Upper Bavaria.
3. Swabian, on the Swabian Alb in Wurtemberg.
4. Upper Rhenish best represented in the 'Forest of Haguenau' in Alsace.
5. Middle Rhenish centred in Starkenburg and Hessen.
6. Lower Rhenish.
7. Thuringian.

It will be convenient first to summarize the main common traits.

*Distribution.* The country occupied by the barrows is distinctive. They are in no case concentrated in the fertile valleys occupied by the Aunjetitz population of the Early Bronze Age and the urnfield folk of the Late Bronze Age. Instead, the barrows are studded thickly on uplands and on rough country. The region where they are thickest would to-day be almost entirely buried in forest, save for deliberate clearings. It would have been uninhabitable in Atlantic times, and can only have become suitable for settlement through the dryness of the Subboreal epoch.<sup>2</sup> At the same time the settlements are concentrated where the water-supply was good.

*Econo-  
mics*

The choice of such stony and inhospitable areas shows that the barrow-builders were not primarily cultivators. It is, in fact, clear from the grave-goods that they were rather pastoralists and presumably hunters. Nevertheless, occasional sickles,<sup>3</sup>

<sup>1</sup> Cf. Eisner, *PA.* xxxiii, pp. 201 f.; Kraft, *Bronzezeit*, pp. 64 f.

<sup>2</sup> Kraft, p. 93; Schaeffer in *Rev. Anthr.* 1926, nos. 4-6; *BRGK.* xii, p. 50.

<sup>3</sup> Hundersingen (Wurt.), *PBl.* 1904, p. 50; Labersricht (OP), *Abh. Nürn.* xv, p. 50; Netovice, Schráníl, *Böhmen*, p. 131.

deposited with the dead, show that they did not neglect agriculture entirely.

Various trade routes crossed the territory occupied by the barrow-builders, and so they were able to obtain foreign products, such as metal, amber, and glass beads; but the settlements are not located deliberately along natural routes or at the junctions of ways as were those of the Aunjetitz folk. Hence commerce played only a secondary part in the economy of our people.<sup>1</sup> *Trade*

The barrows form regular cemeteries but generally of a very modest extent. In Bohemia as many as 100 are juxtaposed,<sup>2</sup> but this is exceptional. On the whole the communities seem to have been quite small<sup>3</sup> and loosely organized. No extraordinarily rich barrows that could be called royal have come to light, but there are marked differences in the wealth of the grave-goods and the elaborateness of the tomb. If there were no kings, there were at least chiefs. *Sepul-  
tures*

Women's graves are quite as richly furnished as men's, which justifies the belief that women occupied an honourable social position. Not seldom a man and a woman, both equally richly attired, lie side by side in the same barrow. Hence monogamy was the rule. *Position  
of women*

Burial rites show certain divergences which are as much temporal as local. A universal feature was the barrow erected over the remains of the departed.<sup>4</sup> No trench was dug to receive the remains; they were laid on the bare earth or on a pavement of stone or wood, and a mound of stones or earth piled over them. Such a method of burial is characteristic of non-agricultural peoples to whom digging is distasteful.<sup>5</sup>

Yet great care was taken to protect the remains. Sometimes, as in Bavaria<sup>6</sup> and Bohemia,<sup>7</sup> a sort of vault of stones was built over them; alternatively a rectangular chamber might be built round the corpse and roofed with wood as at Brunn in Oberpfalz.<sup>8</sup> The stones for the construction of these protective devices must often have been brought from a considerable distance.<sup>9</sup>

Normally the deceased was laid to rest in the extended posi-

<sup>1</sup> It is significant that the bronze types common in the barrows are never met in hoards.

<sup>2</sup> *Real.* ii, p. 82.

<sup>3</sup> Kraft, *Bronzezeit*, p. 95.

<sup>4</sup> Sometimes no trace of a burial is discernible under a barrow. Such

monuments were presumably cenotaphs.

<sup>5</sup> e.g. in North Africa.

<sup>6</sup> Naue, *OB.*, pl. v.

<sup>7</sup> Pič, ii, fig. 4.

<sup>8</sup> *Verh. OP.* iv, p. 215.

<sup>9</sup> *Ibid.*; *Real.* ii, p. 83.

*Inhumation and cremation*

tion. One or two instances of the old practice of contracted burial<sup>1</sup> have been reported in the Hercynian group. But cases of cremation occur in all groups from the beginning of the Middle Bronze Age,<sup>2</sup> and become much commoner in the Late Bronze Age without, however, ousting inhumation altogether. The ashes were not placed in urns save in the Late Bronze Age barrows of Bohemia and Alsace. Normally they were laid on the ground in the same manner as the bones.

*Single or multiple interments*

As a general rule one barrow covered only a single interment or the remains of man and wife. But multiple interments under a single barrow are met everywhere at times. In Bohemia and Oberpfalz six bodies seem a maximum for one barrow. In parts of the Alb multiple interment was regularly practised by certain groups, as many as forty individuals being buried together.<sup>3</sup> So, too, at Labersricht, Wunder believed that each barrow represented a regular cemetery used by the same family from the Middle Bronze Age into Hallstatt C. Elsewhere multiple interments would probably belong to poorer folk.<sup>4</sup>

*Settlements*

Few settlements certainly belonging to the barrow-builders have been identified. The multitude of stray sherds scattered through the earth of the barrows shows that the dwellings of the living were close to those of the dead.<sup>5</sup> Some log-cabins, built without posts, from Mergentheim may illustrate the house-type occupied by the barrow-builders.<sup>6</sup> And their characteristic pottery has been found in caves in Bavaria.

*Tools*

The only tools found in the barrows at first are axes—always unperforated. Later, knives also appear. Tweezers were used for removing the facial hair. In the Late Bronze Age they were supplemented by razors in Bohemia, Oberpfalz, and Franconia and in Alsace.

*Weapons*

The warrior would carry a knife-dagger and a lance or rapier, and used a round shield of wood, studded with bronze bosses.<sup>7</sup> The bronze shields of the Late Bronze Age probably were modelled on these.

Men and women wore necklaces of amber and glass beads,

<sup>1</sup> *Real.* ii, p. 82; *Abh. Nürn.* xi, p. 13; *Nürn. Fest.*, p. 224; *Verh. OP.* lv, p. 197; *Schränil, Böhmen*, p. 117.

<sup>2</sup> Both rites occur side by side in Wurtemberg and Bavaria; Kraft, p. 61; *BAUB.* xviii, p. 117.

<sup>3</sup> Kraft, *Bronzezeit*, p. 59.

<sup>4</sup> So in Alsace, Schaeffer, p. 225.

<sup>5</sup> Reinecke in *WPZ.* 1917, pp. 83 f.

<sup>6</sup> *FbS.* xxi (1913), p. 18; xxii, p. 6 (but these are probably later).

<sup>7</sup> The outline of such a shield (80 cm. in diam.) in the earth and the rows of bosses, forming a cruciform pattern, could be discerned in barrow 4 at Mehrstetten (Wurt.). *PBl.* 1906, p. 50.

and bronze pendants,<sup>1</sup> bracelets (men only on the left arm),<sup>2</sup> finger rings, and anklets (women only). The robes were girt with a girdle of leather, studded, in the case of women, with hollow bronze nobs,<sup>3</sup> and sometimes ornamented with spiked tutuli or wheel pendants.<sup>4</sup> Pins were used to fasten the robes, and perhaps were stuck in the hair. Men generally used one pin and women two.<sup>5</sup>

Everywhere the barrows begin in the Middle Bronze Age and last on into the Late Bronze Age and often into the Hallstatt period. The weapons and tools characterizing the several phases have been noted above (pp. 246 ff.). The evolution of the ornaments is mainly local but certain general outlines may be laid down in advance. The early bracelets are generally light and ornamented with 'engraved' patterns; in the Late Bronze Age heavy ribbed forms like E2 are more common. So the pins in B are generally graceful in form, engraved, and pierced with an eyelet in the neck. In C they grow longer, ribs replace engraving, and the eyelet becomes atrophied. In D extravagantly long types come into fashion in Wurtemberg and on the Rhine; in Bavaria the turban, vase, and globe-headed pins appear. The wheel-headed pin, originally a Rhenish type, enjoyed a wide distribution, apparently in phase C.

Among the pendants the widespread wheel-shaped type, with analogues in Italy in the Pianello epoch, is distinctively Late Bronze Age. It is difficult to see how these can be treated apart from the wheel-headed pins. Both are doubtless solar symbols, but of course the symbol was in use in the Aunjetitz culture.

The outstanding peculiarities of the several groups must be described next to fill in this picture.

### I. HERCYNIAN GROUP

Two main phases are recognizable in this area. In the Middle Bronze Age the cemeteries were concentrated along the fringe of the Frankish Jura in Oberpfalz, round the headwaters of the Berounka (Plzen group) and on the Upper Moldau (Budweis group).<sup>6</sup> There are outposts in Upper and Lower Austria,<sup>7</sup>

<sup>1</sup> This use of the heart-shaped pendant is shown by its position in Labersricht II, *Abh. Nürm.* xv, pl. 2.

<sup>2</sup> *BAUB.* xvi, pl. 35.

<sup>3</sup> Found in place at Mehrstetten, *PBl.* 1906, p. 49, &c. Cf. Naue, *OB.*, pl. vii; Behrens, p. 217.

<sup>4</sup> Brunn 23, *Verh. OP.* lv, pl. xiv.

<sup>5</sup> Schaeffer, p. 229.

<sup>6</sup> For these see Eisner in *PA.* xxxiii, pp. 200 ff.; *Sb. Plzen*, vii (1922), 1-24; Schráníl, *Böhmen*, pp. 116 ff.

<sup>7</sup> *BRGK.* xvi (1925-6), p. 20; Theuer, *Oberöster.*, pp. 10, 38.

and even Western Slovakia (at Smolenice = Szomolány).<sup>1</sup> Inhumation predominates, but there are instances of cremation in Bohemia. The skeletons are generally badly preserved, but the extant skulls are brachy- to mesaticephalic.<sup>2</sup>

*Tools* By far the commonest type of celt was the Bohemian palstav (C<sub>3</sub>).<sup>3</sup> Winged celts are rare and generally belong to the variant B<sub>3</sub>. B<sub>1</sub> occurs once or twice,<sup>4</sup> and E<sub>3</sub> once in Bohemia.<sup>5</sup> A stone celt was found in barrow V at Brunn, which is probably late. Before the end of the period single-bladed knives with an arched back and solid handle begin to appear (type 5).<sup>6</sup> Kraft thinks the type originated in Franconia or Oberpfalz.

According to Eisner<sup>7</sup> the earlier razors (Plate 5; A<sub>1</sub>)<sup>8</sup> belong here, but they should perhaps be assigned to phase D. The 'Italian' indent is visible on the specimen from Labersricht,<sup>9</sup> but at Breitenloh<sup>10</sup> the blade was semicircular with a straight edge. The handle is always cast in one piece with the blade. The association of tweezers and a razor in the same grave at Breitenloh<sup>10</sup> is odd. A barrow at Smedrov yielded a sickle of type 1.

The usual Middle Bronze Age daggers, B<sub>1</sub> and B<sub>2</sub>, and rapiers like A<sub>1</sub> and A<sub>2</sub> are common. But one barrow in the Plzen group contained a short sword like AA<sub>5</sub>, but anticipating sword A<sub>0</sub> of Keszthely form; while in three Bohemian barrows<sup>11</sup> locally made bronze-hilted daggers, exactly like our type A<sub>5</sub> from Wurtemberg, occurred. The hoard of Tachlovice<sup>12</sup> illustrates the armament of a warrior at the end of the Middle Bronze Age—octagon-hilted sword (also known from barrows), small knife-dagger, and Hungarian battle-axe of late form.

The ornaments are valuable as showing the source of metallurgy in this area. Hungarian types predominate. We distinguish:

*Hungarian types:*

Bracelets C<sub>2</sub> and C<sub>3</sub>.

Cylinders<sup>13</sup> (rare and probably late).

Pins B<sub>6</sub> are inspired by Hungarian types.

Pendants B<sub>2</sub> and B<sub>3</sub> (very common).

<sup>1</sup> Hampel, pls. CCXLII–CCXLV.

<sup>2</sup> *Real.* ii, p. 82.

<sup>3</sup> *ZfE.* xxxvii, p. 833.

<sup>4</sup> Behrens, pl. ix, 27; *Sb. Plzen*, vii, pl. ii, 9.

<sup>5</sup> Schráníl, *Böhmen*, pl. xxvi, 11.

<sup>6</sup> Eisner, *l.c.*, fig. 91; cf. Geislohe and Brunn XI.

<sup>7</sup> *PA.* xxxiii, p. 229; Schráníl, p. 30.

<sup>8</sup> Netovice, Houstka, Breitenloh, Labersricht.

<sup>9</sup> Behrens, fig. 26a (barrow XII, 2).

<sup>10</sup> *Abh. Nürnberg*, xi, pl. ii, 3.

<sup>11</sup> Kbely, Chodoun, and Sepikov (Eisner, fig. 91, 15).

<sup>12</sup> *PA.* xviii, p. 248; Schráníl, p. 34.

<sup>13</sup> *Verh. OP.* lv, p. 229; lx, p. 149.

*Native types:*

Bracelets D<sub>2</sub> and D<sub>3</sub>, decorated with hatched ribbons like the local pottery (Fig. 164).

*Rhenish types:*

Pins C<sub>5</sub> and C<sub>5a</sub> (not common).

*Bavarian:* Pendants.

*Swabian:* Pin C<sub>3</sub>.

*Silesian:* Pin E<sub>4</sub>.

Universal types—bracelets F<sub>1</sub> and F<sub>2</sub>, rings type 2, pins B<sub>1</sub>, C<sub>7</sub>, E<sub>12</sub>, and B<sub>10</sub>, and hollow tutuli—also occur. Spiked tutuli are very rare, but wheel-pendants occur.<sup>1</sup> Pin A<sub>4</sub> is sometimes found and may rank as a 'survival' of the Early Bronze Age.<sup>2</sup>

Gold, chiefly in the form of wire rings, is not uncommon in the Plzen group. Amber is not abundant, but a hemispherical bead of that substance is peculiar to Bohemia and Oberpfalz.

The pottery is slipped and generally dark-faced. The main shapes are: (i) biconical jars with almost cylindrical necks, with or without handles, identical in shape with Fig. 164 a;<sup>3</sup> (ii) goblets mounted on a high foot, and provided with a small handle (Fig. 164 b),<sup>4</sup> and cups of the same form without feet; (iii) wooden-looking urns with two handles (Fig. 165 a);<sup>5</sup> (iv) cylindrical vessels; (v) bowls with handles under the wide rims;<sup>6</sup> and (vi) others with the rim turned up into four peaks (Fig. 165 c). The handles in types (i) and (iii) always sit *upon* the shoulder and never join on to the neck.<sup>7</sup> Besides the native forms, (vii) 'Illyrian' jugs are not rare in the Plzen district;<sup>8</sup> from Kbely comes (viii) a large jug of Swabian pattern quite like Fig. 167; and (ix) a few fretwork vases are found in Bohemia and Oberpfalz.<sup>9</sup> The native pottery is decorated with willow-leaf patterns (Fig. 165 a), incised triangles, zigzag ribbons reserved on a hatched field or, most often, with hatched ribbons forming chevrons, inverted triangles, and lozenges. Twin nipples normally sit upon the shoulder of type (i)—a feature

<sup>1</sup> Especially in Oberpfalz, e.g. in Brunn XXIII, 2. This pendant should be Late Bronze Age, but it was associated with a wheel-headed pin which Reinecke would call B. *Verh. OP.* lv, pl. xiv.

<sup>2</sup> *PA.* xxxiii, p. 15, fig. 2 (Velka Osov).

<sup>3</sup> *PA.*, l.c., fig. 88, 1-3; Behrens, xii, 8; *WPZ.* xi, p. 58. The handles are always sitting on the shoulder, never

joining shoulder and neck.

<sup>4</sup> *PA.*, l.c., fig. 88, 7; Behrens, pl. xii, 13.

<sup>5</sup> *PA.*, l.c., fig. 88, 8; Behrens, pl. xi, 15.

<sup>6</sup> *PA.*, l.c., fig. 88, 17; Behrens, pl. x, 2.

<sup>7</sup> *PA.*, l.c., fig. 88, 19.

<sup>8</sup> *PA.*, l.c., p. 195.

<sup>9</sup> *PA.*, l.c., p. 199; *Sb. Plzen*, vii, p. 5, fig. 3; *Abh. Nürnberg*, xi, pl. v, 3-4.

common in Aunjetitz pottery farther east. In some pots of form (iii) the surface of the body has been intentionally roughened—one might say ruffled.

The Hercynian culture is particularly important perhaps because its centres were adjacent to the main source of Central European tin. Comparatively few of the bronze types are referable to the Aunjetitz culture; the hill folk of Bohemia and Oberpfalz seem to have learnt metallurgy in the Hungarian school. Bohemian tin exported to Hungary would perhaps travel through the Furth gap or up the Moldau; Hungarian bronze and gold would move in the opposite direction. Moreover, a western branch of the central amber route was opened in the Middle Bronze Age across Oberpfalz. On the other hand, some of the ceramic types go back to the Early Bronze Age culture of Bavaria; the bowls with peaked rims, (vii), are found in the graves of Straubing, some with slits under the rim as in the barrows.<sup>1</sup> At the same time relations with Hungary are suggested by several types of bowl, and a crater like our Fig. 150 c, from Oberpfalz.<sup>2</sup> Even the favourite type (i) occurs in the Banat.

But many of the constituents of the cultures are neolithic. Types (i) and (ii) may be connected with the local Nordic (Bernburg) cultures.<sup>3</sup> The willow-leaf pattern might be descended from the same group,<sup>3</sup> whereas the triangle would belong to corded ware. The pedestalled bowl is Danubian in origin but had been taken over by the Michelsberg and Aunjetitz folk. Most probably, however, the tumulus builders reached Bohemia already in possession of metal from the Upper Danube.

The extension of the Hercynian culture to embrace Lower Austria might be justified by the bronze types, bracelets, F1, C2, and C3, pins C11, and rings type 2 from the barrows near Winklarn,<sup>4</sup> and a footed bowl of type (ii) from Gross-Weikersdorf.<sup>5</sup> But the only vase from the Winklarn barrows is reminiscent of the urns from Hungarian cemeteries of group 1. From the barrows of Smolenice<sup>6</sup> in Slovakia come peaked bowls (v), and 'Illyrian' jugs,<sup>7</sup> and rings of type 2, which only occurs farther south in the Late Bronze Age. But the skeletons at Smolenice were buried in the contracted position, so

<sup>1</sup> Eisner, *P.A.* xxxiii, p. 32, fig. 7.

<sup>2</sup> Behrens, pl. XII, 1.

<sup>3</sup> Eisner, *l.c.*; but there are Aunjetitz analogies too.

<sup>4</sup> *MPK.* i, pp. 132 ff.

<sup>5</sup> *JKZ.* i (1903), p. 36, fig. 53.

<sup>6</sup> Hampel, pls. CCXLII f.

<sup>7</sup> Pič, ii, fig. 14.





FIG. 164. Urn and bowl from barrow at Kbely. Narodni Museum

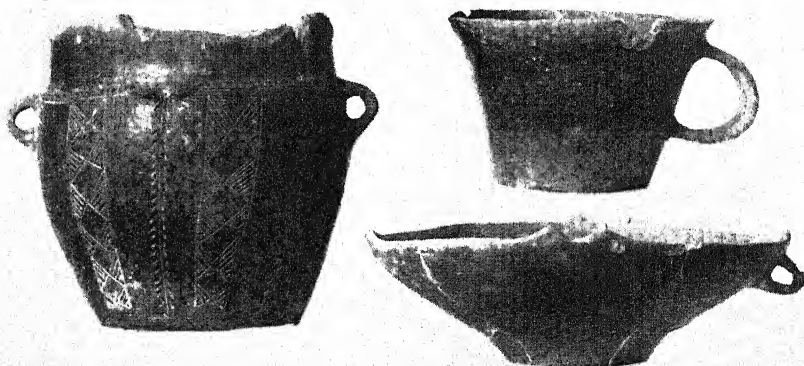


FIG. 165. Jar, cup, and dish from barrow at Leštany. Narodni Museum



that the treatment of this group as a mere extension of the Hercynian is open to question. Still, in the cemetery of Gmünden in Upper Austria both contracted and extended burials were observed.<sup>1</sup>

In its second phase the Hercynian Tumulus culture in Bohemia advances down the Moldau to Prague, and passes over into that of Milaveč. The latter bears a very different aspect. It is characterized by the emergence of important chiefs and princelings, denoted by great barrows of exceptional wealth, and the general adoption of cremation with inurnment of the ashes.

The distinctive bronzes are slashing swords of types B<sub>4</sub><sup>2</sup> and C<sub>3</sub>,<sup>3</sup> daggers like B<sub>4</sub>,<sup>3</sup> knives like 5, 7 and 8, Hungarian mace-heads,<sup>3</sup> turban pins, D<sub>12</sub>, and ribbed pins, E<sub>6</sub>, as well as B<sub>10</sub>, heavily ribbed bracelets, C<sub>2</sub>,<sup>4</sup> and twisted types, F<sub>3</sub>. As in contemporary deposits in Italy beaten bronze was already in use—witness a ribbon-handled cup from Velka Dobra and the celebrated wheeled crater from Milaveč.<sup>5</sup> The old, wooden shield was replaced by brazen bucklers. Some of the older ceramic types, notably (i) and (ii), still survive, e.g. at Repeč, in a degraded form, but the distinctive vases of the period are the huge cinerary urns with cylindrical necks, like Fig. 189, debased Lausitz ossuaries, and the curious storied-urns.

The Milaveč culture is plainly influenced by that of the contemporary Knoviz urnfields, to be discussed later. It occupies phase D of the Bronze Age and the subsequent section of the Iron Age (Reinecke's Hallstatt A), and will be mentioned again in its proper chronological context in Chapter XVII.

## II. THE BAVARIAN GROUP

In the Middle Bronze Age the highlands between Munich and the Alps, especially round the Würmsee, the Ammersee, and the Staffelsee, were thickly populated. Smaller groups lived to the north and enjoyed a mixed culture, midway between the pure Bavarian and the Hercynian, while the barrows in the lake district of Upper Austria<sup>6</sup> are almost as closely allied to Bavaria as to Bohemia.

<sup>1</sup> Theuer, p. 10.

<sup>2</sup> Milaveč.

<sup>3</sup> Repeč, 12; Haj, *Sb. Plzen*, vii, fig. 4.

<sup>4</sup> Husine, 28.

<sup>5</sup> Pič, pl. xxviii.

<sup>6</sup> Theuer, *l.c.*, p. 10; *Nbl. d. V.* iii (1927), pp. 43, 86.

In Upper Bavaria the contrast between Middle and Late Bronze Age is particularly clear. In the former period Naue<sup>1</sup> recognized only inhumations, but cremation is certainly attested.<sup>2</sup> The bronzes represent varied traditions:

*Tools:*

Celts C2.

Knives 5.<sup>3</sup>

Sickles, (i) (Unter-Föhring I).

Stone celts and flint knives.<sup>4</sup>

*Weapons:*

Ogival daggers, rapiers of type A1, A2, and C1, rarely bronze-hilted forms such as B1, B2, and B3.

*Ornaments:*

In Phase B—

Bracelets F1, (?) C2, (?) C3, and B1.

Pins C3, B8.

Rings, type 2.

Spiked tutuli.

In Phase C—

Bracelets B2, D3, and D1.

Anklets D1 (very thin wire version).<sup>5</sup>

Pins (?) B6,<sup>5</sup> C7,<sup>6</sup> C3 (without eyelet or ornament).

Pendants B4.<sup>6</sup>

Spiked tutuli.

Amber was at no time rare, but gold is only represented by a few tiny wire helices. Stray beads of translucent blue glass were occasionally imported.

The graves were not richly furnished with vases. The main forms are: (i)<sup>7</sup> and (ii), like Fig. 164 a-b, as in the Hercynian group; (iii) wart-ornamented urns (like Fig. 167, a);<sup>8</sup> and (iv) jugs (like Fig. 168 b),<sup>9</sup> corresponding precisely to the Swabian types; (v) shallow carinated cups with the handles joining rim and keel (Fig. 166);<sup>10</sup> (vi) trumpet-mouthed jugs; and (vii) hemispherical bowls.

The Hercynian and Swabian types are decorated in the appropriate styles. The native cup, (v), is plain, but the jug, (vii),

<sup>1</sup> *OB.*, p. 48.

<sup>2</sup> *BAUB.* xvi, p. 115; xviii, p. 117.

<sup>3</sup> Naue, *OB.*, p. 101.

<sup>4</sup> *BAUB.* xvi, p. 97.

<sup>5</sup> Goggenhöfen.

<sup>6</sup> Asenkofen E.

<sup>7</sup> *BAUB.* xvi, pl. 37, 1; Behrens,

pl. viii, 2.

<sup>8</sup> Asenkofen G, Unterföhring 3.

<sup>9</sup> *BAUB.* xvi, pl. 38, 8; cf. Kraft, pl. XLIX, 3.

<sup>10</sup> Naue, *OB.* pl. xxxviii, 2; Behrens, fig. 24, i.

is ornamented with rows of fretwork triangles. These are usually executed with a stamp in Bavaria,<sup>1</sup> and not truly excised. The same technique had already been employed locally in the decoration of bell beakers.

The authors of this culture would be largely descended from the Corded Ware folk whose barrows have been found in the centres of Middle Bronze Age settlement (p. 151 above). The rise of a local metallurgy among this folk is to be connected with the amber traffic which crossed their homeland on the way to the Brenner, but the inspiration was mainly Hungarian.

In the Late Bronze Age barrows cremation prevails, but the ashes are only exceptionally placed in urns.<sup>2</sup>

Celts no longer occur in graves. The leading bronze types are swords of types B<sub>3</sub> (with swelling hilt), C<sub>3</sub>, and B<sub>4</sub>, knife-

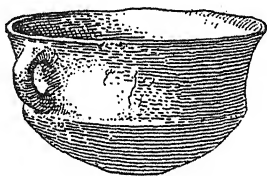


FIG. 166. Bavarian Cup, Abensburg.  
After Behrens.  $\frac{1}{4}$

daggers like B<sub>4</sub>, and single-bladed knives like 15 and 12, vase- and globe-headed pins, heavily ribbed bracelets, E<sub>2</sub> and E<sub>3</sub>, and twisted types, F<sub>3</sub>, wire spirals, spectacle spirals, wheel pendants (often of white metal), bronze tubes, and girdle-plates. The last-named objects<sup>3</sup> are often richly ornamented with engraved spirals.

The pottery of the epoch is graceful and often very fine. The fine ware is frequently ornamented with flutings and embellished by graphite polishing. Conical warts still adorn graphited ware,<sup>4</sup> and fretwork remains in use, but is combined with stamped circles obviously inspired by metal work.<sup>5</sup> In larger vessels the body is often rough while the neck is polished (Fig. 192).

In the furniture of the Late Bronze Age barrows the influence of the contemporary urnfields is patent; the metal types indeed correspond exactly, save that fibulae and razors are absent. The pottery, too, has many parallels in the urnfields.

<sup>1</sup> *Mannus*, xviii, p. 23.

<sup>2</sup> Naue, *OB.*, p. 53.

<sup>3</sup> Naue, *OB.*, pls. xxiv, xxvi; *AuhV.*

v, pl. 38.

<sup>4</sup> Riegsee 23.

<sup>5</sup> Untersöchering 1.

The mutual relations of the two cultural groups will be discussed in Chapter XVII.

### III. WURTEMBERG

The most important group in Wurtemberg is constituted by the countless barrows on the Swabian Alb. Kraft, who has devoted an exhaustive monograph to their study, recognizes four phases, B, C, D, and E, of which E corresponds to Reinecke's Hallstatt A. The burial rites remained constant throughout, but exhibit local divergences; on the Lauter a single barrow was regularly used to cover a large number of corpses, in contrast to the individual interments prevalent elsewhere. Cremation and inhumation occur side by side everywhere. In one case a corpse was fettered. He wore on his legs a pair of anklets like Fig. 170, 3, connected together by a fine chain.<sup>1</sup>

According to Schliz<sup>2</sup> three distinct physical types are represented in the barrows of Wurtemberg, viz. Nordic dolichocephals, Dinaric brachycephals, and a cross between the two.

Kraft groups the bronzes as follows:

Phase B. Celts B<sub>1</sub> (and B<sub>2</sub>).

Ogival daggers.

Rapiers A<sub>1</sub> and B<sub>1</sub>.

Bracelets F<sub>1</sub>.

Anklets 1 (body of thin wire).

Pins C<sub>3</sub> (? A<sub>6</sub>).<sup>3</sup>

Spiked tutuli.<sup>4</sup>

Phase C. Celts B<sub>2</sub>.

Rapiers, transition forms between A<sub>1</sub> and A<sub>2</sub>.

Bracelets F<sub>1</sub>.

Anklets 2.

Pins C<sub>3</sub> (long and plain, with and without eyelet),

C<sub>7</sub>.

Wheel pendants.

Spiked tutuli.

Phase D. Celts B<sub>3</sub>.

Rapiers A<sub>2</sub>.

Bracelets B<sub>2</sub>.

Anklets 3.

Pins C<sub>5</sub>, C<sub>7</sub>.

<sup>1</sup> *PBl.* 1902, p. 38.

<sup>2</sup> *AfA.* ix, p. 229.

<sup>3</sup> *ZfE.* xxxvi, p. 581.

<sup>4</sup> Kraft, p. 35, traces an evolution from

simple forms with flat disk, decorated only with concentric ridges, to stepped forms, ornamented with bosses (phase D).

Phase E. Celts (?).

Rapiers A<sub>3</sub>.

Bracelets D<sub>3</sub>, G<sub>1</sub>.

Pins B<sub>8</sub>, B.

Tutuli (buttons) with a loop on the back.

Arrow-heads, spear-heads, and tweezers are found at all periods, but razors and single-bladed knives are missing, and sickles extremely rare. The extreme slenderness of the celts has been noted by Kraft<sup>1</sup> who terms them 'grave-axes'; these are never encountered in hoards or stray. Important is the bronze-hilted dagger, Plate 1, A<sub>5</sub>, identical with three Bohemian specimens.<sup>2</sup> Bronze-hilted swords are rare in the barrows.

Of the ornaments the beautiful girdle-clasps with leaf-shaped plates (Plate 13, 2) are native to Wurtemberg. Thence they were exported to Bavaria and Switzerland.<sup>3</sup> There was a pretty, local type of bracelet B<sub>1</sub>, with open-work slits instead of ribs.<sup>4</sup> Pin C<sub>3</sub> seems native to Wurtemberg; at least it is commoner there than anywhere else.<sup>5</sup>

Amber was freely used, not only for necklaces but also for ornamenting girdles. Gold was rare. A Swiss pin of bronze with a gilt head, from a barrow at Nehren, is notable.

The pottery, not divisible very surely between the several typological phases, was generally black or dark brown; red ware was preferred for small cups. The main forms are large urns with funnel necks (Fig. 167),<sup>6</sup> jugs of a rather similar profile (Fig. 168 a-b), shallow cups, and bowls (Fig. 168 c). Three methods of ornamentation were used: ruffling of part of the surface (Fig. 167 b), the application or extrusion of warts (Fig. 167 a), and fretwork (Fig. 168). The latter method of decoration<sup>7</sup> was particularly widespread in Wurtemberg.

According to Kraft the pottery reveals the Swabian barrow-builders as a mixture of eastern and western elements. The jugs and handled-cups are aptly derived from those of the proto-Aunjetitz group.<sup>8</sup> Ruffling was known in the same context, as the vase from Leubingen shows. The fretwork ware

<sup>1</sup> p. 27.

<sup>2</sup> Bottingen II, *PBL*. 1905, p. 34.

<sup>3</sup> *PBL*. 1891, pl. iv; Behrens, pl. vii, 26; *AsA*. xvii, p. 90, fig. 1.

<sup>4</sup> *FbSw*. xx, p. 11, fig. 5; probably Late Bronze Age.

<sup>5</sup> *ZfE*. xxxix, p. 803.

<sup>6</sup> These might in the last resort be derived from the pitcher-urns of the

Hungarian group 1, Winklarn providing a possible intermediate form.

<sup>7</sup> See Schumacher in *AuhV*. v, pp. 176 f.; *BRGK*. x, p. 32; Behrens, p. 217; *Mannus*, xviii, pp. 14 ff.

<sup>8</sup> The handled bell-beakers of Franconia, e.g. fig. 165, might equally well be invoked.



would be based upon the Bell-beaker tradition. Some of the urns and jugs, and perhaps the shoulder-warts, might be referred to the Michelsberg culture. Some small cups and the funerary use of the urns go back to Corded Ware. From the same culture came the distinctive burial rite—the use of the barrow.

Knowledge of metallurgy must on Kraft's chronology have been derived from the Early Bronze Age culture of the valley. The spiked tutulus can indeed be connected with the wire type of Straubing (Pl. 14, A1). The Rhenish types (wheel-pins, and anklets 3) would only have reached the Alb in Period VI (D). The Hungarian types appear even later. If Kraft's division, particularly in these points, be at the moment rather questionable, it at least shows the very low limits that may be set for the Hungarian Bronze Age. It is at the same time the great merit of this author's work that he has established the continuity of the Tumulus Bronze Age with the Tumulus Iron Age of Hallstatt C—a continuity plainly revealed in the pottery.

#### IV. UPPER RHENISH PROVINCE

On the Upper Rhine the most important barrows are those in the Forest of Haguenau (Alsace), described in a superbly produced monograph by Dr. Schaeffer.<sup>1</sup> A few barrows go back to Period IV, the Early Bronze Age,<sup>2</sup> the rest belong to Periods V and VI, lasting on into Hallstatt times.

Cremation and inhumation were in use at all times simultaneously, but at first the former rite was reserved for women and children.

With one exception belonging to type B, the celts, none of which are earlier than phase C, all belong to the West European group of palstavs. The daggers represent type B2. Only two rapiers, both of type A2, and no bronze-hilted daggers, swords, nor spear-heads were found. Arrow-heads were rare.

The chief ornaments in use in the Middle Bronze Age were:

Bracelets (worn only by women): F1 and A2 a.

Anklets, in phase B1; in C, 2 developing into 3. (Fig. 170.)

Pins, C3 in phase B; wheel-pins (C5) and pins like C7 in C.

Wire girdle clasps (worn by men and women alike).

Pendants of types B3 and A2 were found in one grave.<sup>3</sup>

<sup>1</sup> *Les Tumulus de la Forêt de Haguenau*, i.

<sup>2</sup> *op. cit.*, p. 161, and fig. 31, j-o,

Daggers like A1, pins A1 and C2, torques A1.

<sup>3</sup> Schaeffer, fig. 38, r-s.

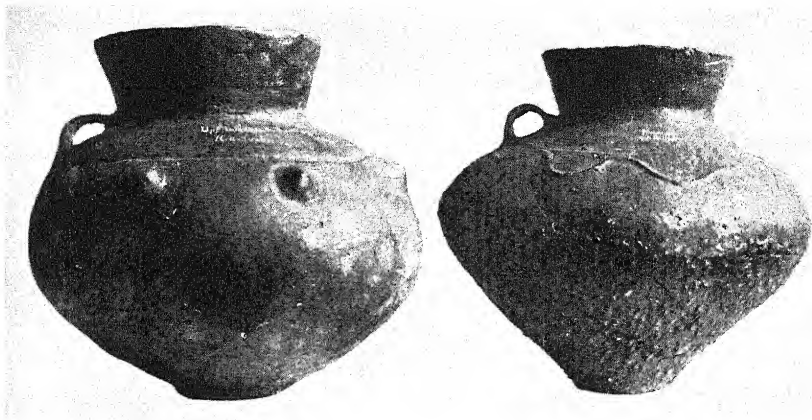


FIG. 167. Urns from barrows at Upflamör and Hossingen. M. Stuttgart.  $\frac{1}{4}$



FIG. 168. Jugs from Grossengstingen and Gomadingen. M. Stuttgart.  $\frac{1}{4}$



FIG. 169. Vases from barrows round Haguenau, after Schaeffer.  $\frac{1}{4}$



Amber was common, but Schaeffer<sup>1</sup> doubts its Baltic provenance.

The pottery includes: (i) urn-like jugs with funnel necks<sup>2</sup> (Fig. 169 b); (ii) pedestalled bowls with handles, very similar to the Hercynian type;<sup>3</sup> (iii) jugs with funnel necks (the rim is sometimes splayed out but never to a real 'trumpet-mouth' as in Bavaria), shallow cups (Figs. 168, a and c), bowls, and cylindrical pyxides. Besides simple incised triangles, the favourite method of ornamentation was fretwork. The earlier examples with simple zigzag bands<sup>4</sup> go back to phase B (Fig. 169 c). Later, more elaborate designs supplemented by stamped mo-

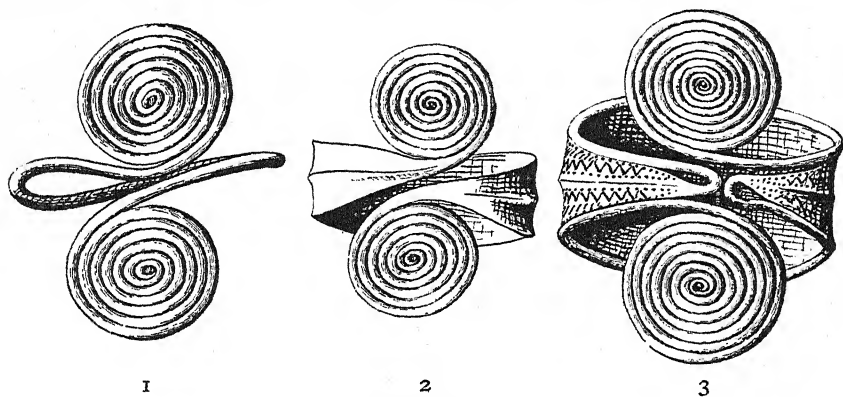


FIG. 170. Anklets, Haguenau.  $\frac{1}{2}$

tives (circles, &c.) (Fig. 169 b) came into use and remain current into the Hallstatt period.<sup>5</sup>

The pottery contains Zoned-beaker, Michelsberg,<sup>6</sup> and Corded Ware elements. Schaeffer<sup>7</sup> expressly recognizes, too, that the habit of barrow-building and the rite of cremation were introduced by the Corded Ware folk.

Metallurgy was learned in the Danubian school. Many types come from Hungary and Austria, none from Gaul.<sup>8</sup> As Danubian we may name, beside the pins and torques of the earliest barrows, the heart-shaped pendants, certain cups,<sup>9</sup> and

<sup>1</sup> p. 261; yet the typical 'Danish' centre-piece for a necklace of several strings occurs (*ibid.*, fig. 18j).

<sup>2</sup> *Ibid.* pl. v, d. This is almost exactly paralleled on the Swabian Alb, Behrens, pl. XIII, 6.

<sup>3</sup> Schaeffer, pl. VII.

<sup>4</sup> *op. cit.*, figs. 56, C-D and 31, A-F.

<sup>5</sup> *Ibid.*, p. 189.

<sup>6</sup> The urn of plate v, d with its verti-

cal ornament is clearly enough descended from vessels such as we find at Lingolsheim; Forrer, *op. cit.*, fig. 21, e and n. Cf., further, Kraft in *Bj.* 131, p. 191.

<sup>7</sup> *op. cit.*, p. 215.

<sup>8</sup> Schaeffer, p. 200.

<sup>9</sup> *Ibid.*, pl. XIX, A-C, G. Cf. Kraft in *Bj.* 131, p. 191.

the pedestalled bowls. But this tradition was developed locally, and the handsome anklets, 3 for example, may rank as a pure Alsatian type that was exported both to Wurtemberg and France.

In the Late Bronze Age cremation becomes the usual rite. Razors of type A4<sup>1</sup> and knives 3, 12 and dagger B4, turban-headed pins, fluted pottery,<sup>2</sup> and wart-ornamented urns<sup>3</sup> appear. Evidently the native culture is absorbing elements from the urn-field group whose advance will be described in Chapter XVIII.

## V. MIDDLE RHENISH GROUPS

The remaining groups of barrows in the Rhenish province partake in a general way of the characters noted in Alsace. On the Vogelsberg the barrow builders overstepped the bounds of the heath land and resorted to clearing to render the forest habitable.<sup>4</sup> In the mature phase the palstav of Lissauer's West European type<sup>5</sup> is almost the sole celt-form in use. Bronze-hilted swords are exceptional, and single-bladed knives, razors, and sickles are not found in barrows.

Among the ornaments the wheel-headed pin<sup>6</sup> is the most characteristic. It was probably invented on the Rhine; moulds for its manufacture have been found near Mainz. It was exported to Denmark,<sup>7</sup> Poland, and Lower Austria.<sup>8</sup> Probably the wheel-headed pin is just an openwork version of the disk-headed pins ornamented with an engraved cross (A6) of the Early Bronze Age; indeed in some specimens the outer ring is not a simple wire loop, but a broad flat band.

The date of such a widespread type is important. It is usually assigned to phase B; but in Wurtemberg Kraft labels it D, and in Alsace and Denmark<sup>9</sup> it appears first in phase C. The latter is probably the correct date.

Besides the foregoing, some Swabian pins C3, C7, and C8 were imported or transmuted into local types like C4.

A special type of tutulus with a tang and a loop on the back was developed in Starkenburg<sup>10</sup> and exported as far as Alsace<sup>11</sup> and Wurtemberg.<sup>12</sup>

<sup>1</sup> Schaeffer, fig. 49e.

<sup>2</sup> *Ibid.*, pl. VI, L.

<sup>3</sup> *Ibid.*, fig. 39j. Funnily enough a diorite celt was deposited in the same grave!

<sup>4</sup> Wahle, *BRGK.* xii, p. 50.

<sup>5</sup> *ZfE.* xxxvii, p. 807; but the earlier type B1 was also used, e.g. Behrens, pl. xvii, 6 (Baierseich).

<sup>6</sup> *ZfE.* xxxvi (1904), p. 587; *BRGK.* x,

p. 31.

<sup>7</sup> *MSAN.* 1908, p. 33.

<sup>8</sup> Gemeinlebern (probably a pendant only).

<sup>9</sup> = Sophus Müller 2; *MSAN.* 1908, p. 33, fig. 29.

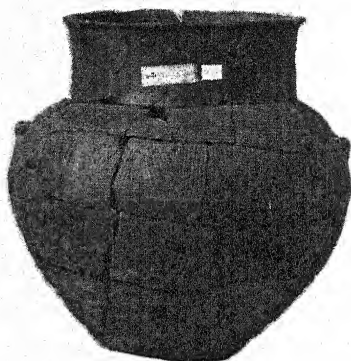
<sup>10</sup> Behrens, pl. xviii, 12.

<sup>11</sup> Schaeffer, fig. 18 A.

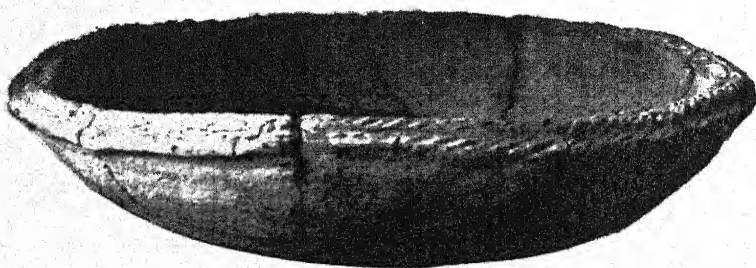
<sup>12</sup> Kraft, *Bronzeseit*, pl. xviii, 1.



*a*



*b*



*c*

FIG. 171. Late Bronze Age vases from barrows round Haguenau, after Schaeffer. *a*  $\frac{1}{3}$ , *b*  $\frac{1}{7}$ , *c*  $\frac{1}{3}$





North of the Main in Hessen the well-known ribbed collars<sup>1</sup> appear as imports from the Germanic province farther north.

The western amber route followed the Rhine from the mouth of the Main as far as the Neckar,<sup>2</sup> and hence amber is not rare in the barrows between these rivers. It was through the trade in this substance that Swabian and even Danubian types

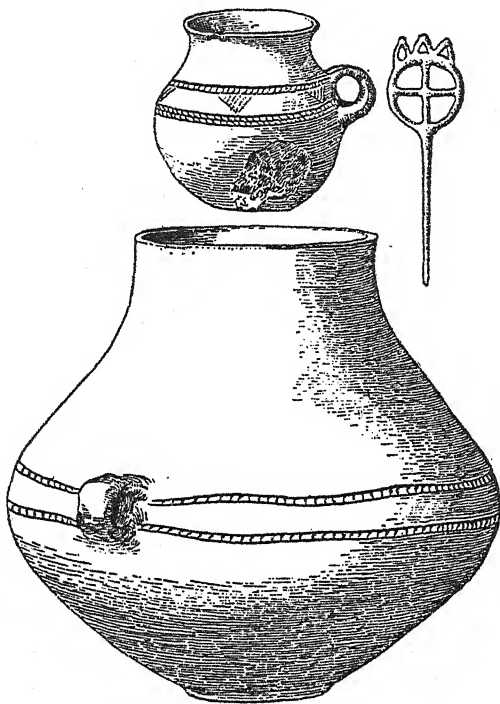


FIG. 172. Vases from Baierseich, barrows 2 and 4 (grave 3). †  
After Behrens.

reached the Rhineland; the comparative wealth of our area in gold is probably also related to this commerce.

The pottery from the barrows falls into two groups. In Starkenburg (Baierseich) a red ware sparingly decorated with incised patterns was manufactured (Fig. 172).<sup>3</sup> Most of the cups and jugs are patently derived from Adlerberg types, but for some an ancestry in the Aunjetitz culture must be sought;<sup>4</sup> the big amphora, on the other hand, is no less obviously descended from Corded Ware.<sup>5</sup>

<sup>1</sup> Behrens, pp. 207 and 216.

<sup>2</sup> Navarro in *Gf.* 1925, p. 495.

<sup>3</sup> *AuhV.* v, pl. 2, 40-5.

<sup>4</sup> *Bj.* 131 (1927), p. 192 (Kraft).

<sup>5</sup> Behrens, p. 219.

North of the Main in Hessen<sup>1</sup> fretwork vases, much in the Alsatian style but mainly late, occur. Similar vases occur in flat cremation graves on the Adlerberg near Worms that belong apparently to phase D (razors, socketed arrow-heads).<sup>2</sup>

## VI. THE LOWER RHENISH GROUP

On the Lower Rhine there is an interesting series of cemeteries extending from Bonn into Holland.<sup>3</sup> The extensive groups of barrows are here situated on the terraces bordering the plain of the Rhine and its tributaries that are to-day covered with forest or open heath.

We have already seen that barrows were being erected in the same area by the Corded Ware and Zoned-beaker peoples, and that some of these barrows already contained bronze objects. The 'late neolithic' barrows of Periods III and IV form the nuclei for the later Bronze Age cemeteries; many in fact contain secondary interments of Middle and Late Bronze Age date. The Lower Rhenish Tumulus Bronze culture is patently rooted in the local 'neolithic'. But true 'bell barrows' now occur.

The furniture of the Bronze Age graves is comparatively poor. We have a few rapiers of type A1 and a slashing sword of type C2, then palstavs of North German and Western types, and the usual tweezers. The ornaments include finger-rings with double spiral ends, and wheel-headed pins. Among the rare vases is an early fretwork jug, recently discovered.<sup>4</sup>

It will be seen from the foregoing summary that the Lower Rhenish bronze industry was inspired almost entirely by that of South-West Germany; the influence of the 'Germanic' province is negligible, even in northern Holland.

In the Late Bronze Age the south-western connexions were reinforced by the intrusion of the urnfield folk from the Upper Rhine, who occupied all the lowlands right into South Holland. The barrows continued in use on the terraces, but their furniture now reflects strong influence from the urnfield cultures. Cremation replaces inhumation, and vases characteristic of the urnfields frequently appear in barrows. The great majority of the Lower Rhenish fretwork pottery belongs to this phase; many of the vases, indeed, are distinctive urnfield shapes. Stampfuss<sup>5</sup> very properly remarks that the fretwork tech-

<sup>1</sup> Behrens, pl. xx.

<sup>2</sup> *Ibid.*, p. 180 and figs. 31-2.

<sup>3</sup> Rademacher gives an excellent account of these in *Mannus*, *Ergänzungsband* iv, pp. 115 ff., pls. ix-x. There

is much unpublished material from the Province of Drenthe in the museum at Assen.

<sup>4</sup> Rademacher, *l.c.*, pl. ix, B1.

<sup>5</sup> *Mannus*, *Ergänzungsband* v, p. 85.

nique must have been adopted by the urnfield folk in their progress down the Rhine. Here, as in Alsace, the Tumulus Bronze culture lasted well into the Iron Age.

## VII. THURINGIAN GROUP

Middle Bronze Age barrows are comparatively rare in Thuringia. They appear to cluster along the western amber route and lie for the most part in the south-west of the province. In the Saale valley there are only two or three graves of the Middle Bronze Age.<sup>1</sup> The southern frontiers of the Germanic province extended to the Heights of Magdeburg,<sup>2</sup> and strong influence from this quarter is detectable in the Thuringian Bronze Age.

The corpses were sometimes encased in hollowed oak-trunks as in Denmark.<sup>3</sup> To Germanic influence the following bronze types are due: ribbed collars,<sup>4</sup> spiral-ended bracelets like D1 but with a flat or pointed-oval body as compared with the cylindrical form current in Hungary. Arm cylinders are also common.

We may designate southern the rings of form 2, the ribbed bracelets (B1), and the pins B10.<sup>5</sup>

From the Rhineland came West European palstavs (the commonest celt in Thuringian barrows), the numerous wheel-headed pins,<sup>6</sup> and the type C4.

Swabian influence is indicated by one winged celt (B2),<sup>7</sup> the pin C3,<sup>8</sup> and girdle clasps I.

A native Thuringian pin has a double-spiral head. Elsewhere this type would be called Late Bronze Age, but here it is associated with wheel pins.<sup>9</sup>

For the rest the barrows contain daggers, one with a bronze hilt,<sup>10</sup> rapiers, spear-heads, arrow-heads, and button-sickles. Razors are absent. On the other hand, stone battle-axes are not rare.<sup>11</sup>

The pottery from the Thuringian barrows is practically unknown. The use of neolithic Corded Ware barrows for

<sup>1</sup> Peissen (Pins B5 b, bracelet B2 a) and Kayna, Weissenfels (Pins B5 a, bracelet B3, Nordic collar), M. Halle.

<sup>2</sup> Cemetery of Havermark (Jerichow); *JST.* viii, pp. 135 f.

<sup>3</sup> *JST.* v, pp. 35 f.

<sup>4</sup> Kayna, Gerstengrund, Stadtlengsfeld, and Grautschen; cf. Behrens, p. 207.

<sup>5</sup> *VAT.*, pl. XII, 118.

<sup>6</sup> The Hanoverian variant with two ears is common as at Baierseich in Starkenburg.

<sup>7</sup> Sachsenburg a. d. Unstrut, iii.

<sup>8</sup> Igelskuppel, Unterbimbach, iii. 3.

<sup>9</sup> Schenkenhügel (Behrens, no. 508), Dörrensolz, Oberkatz, Kossinna, *DV.*, pl. XII; cf. Behrens, p. 215.

<sup>10</sup> Schwarza.

<sup>11</sup> *VAT.*, pp. 114, 120.

Middle Bronze Age interments<sup>1</sup> may well furnish a link between the Thuringian barrow-builders of the Bronze Age and their neolithic predecessors in the same region. At the same time the rarity of Middle Bronze Age barrows on the Saale and in Thuringia generally is quite compatible with the relatively late date assigned to the barrows of the Leubingen group. Despite the Early Bronze Age types they covered, they may well fall in phase B rather than A.

*Conclusion* The foregoing brief survey confirms the essential uniformity of the Tumulus Bronze Culture. Despite deep-seated differences in pottery, that are more than stylistic, the several local ceramic groups melt imperceptibly one into the other. Bavaria is linked on the one hand to the Hercynian group, on the other to the Swabian and Alsatian. We are therefore unable to follow Kossinna<sup>2</sup> in separating the Hercynian group, which he calls 'Illyrian', from the rest which he assigns to the Kelts; to which group is Upper Bavaria to be assigned?

Nevertheless the population that erected the barrows was neither unitary nor uniform. The barrow-builders were the descendants of predominantly pastoralist tribes that had occupied the several upland regions in late neolithic times, and continued to use stone implements while the Early Bronze Age civilization was growing up in the valleys. The constitution of the local neolithic groups would vary from place to place: Schussenried and Nordic folk in Bohemia, Michelsberg and Bell-beaker folk in Wurtemberg and the Rhine valley, Altheim people in Bavaria and Upper Austria.

But one common element can be distinguished everywhere—the Corded Ware people. From these were derived the barrow, the rite of cremation, and various ceramic types. Economically and socially too the Bronze Age barrow builders carry on the traditions of the Battle-Axe folk. The Tumulus Bronze Age began when these learnt the arts of metallurgy or captured some smiths, and, by robbery or barter, secured supplies of the raw material.

Whence was the new knowledge derived? A comparatively small number of types are based directly on the Aunjetitz and Adlerberg traditions, while a few more were at home in the Alpine 'Copper Age'. Even on the western frontier of the province native Gaulish types are lacking. Few forms peculiar to the Germanic province, despite its extraordinary wealth and

<sup>1</sup> *VAPS.* i, pls. I and II.

<sup>2</sup> *DV.*, p. 62.

vigour, reach our area, and none penetrate beyond the Main. Italian influences first became prominent in the Late Bronze Age. On the other hand, distinctively Hungarian types extend to the Rhine and to Thuringia. Even in the pottery a certain Hungarian influence may be suspected. For instance, trumpet necks had been in fashion there since the Early Bronze Age. And fretwork decoration was employed as early on the Save and the Drave. The orthodox theory indeed is that this system of ornamentation was introduced into South Germany by the Bell-beaker folk, since it is used on beakers there as in Moravia. But one is inclined to assume some direct connexion either along the Danube with Pannonia or more probably across the Alps with Carniola, especially as the Laibach jugs are to some extent akin to the German. Ratishof (near Ranshöfen) in Upper Austria<sup>1</sup> might constitute a link. So, too, the simultaneous adoption of wart ornament in Bavaria, East Germany, and North Hungary is best understood by the diffusion of metal plaques thus ornamented in connexion with the trade in Slovakian copper.<sup>2</sup> And we shall see that there was an actual branch of the Tumulus culture south of the Alps in Western Hungary. Hence, in the creation of the Middle Bronze Age industry of South-West Germany the main fresh stimulus must have come from Hungary.

The Tumulus Bronze Age culture would then have arisen at a date when the Aunjetitz culture was still flourishing in the valleys; it would continue to develop long after those valleys had been occupied by the urnfield cultures.<sup>3</sup>

#### VIII. THE TUMULUS BRONZE CULTURE OF SILESIA AND POLAND

East of the Elbe lie a few cemeteries of barrows which seem on the whole parallel to the South-West German series, and may be described as an appendix here.

The burial rite in Silesia and Poland<sup>4</sup> was generally, though not exclusively, inhumation. Where exact observations have been made, the body was interred in the contracted attitude. Flat graves also occur. In some cases of cremation the ashes lay in a trench large enough for a complete skeleton.

The metal furniture of the graves is poor but, in contrast to

<sup>1</sup> Theuer, pl. iv, 8.

<sup>2</sup> Cf. p. 330 below.

<sup>3</sup> *Real.* ii, p. 96.

<sup>4</sup> For the construction of the barrows

see *Przeg. A.* ii (1924), pp. 260 ff., figs. 4, 14, 17, and 18, and von Richthofen, pp. 6 and 144 f.

the western tumulus area, several contemporary hoards have been found to enlighten us on the metal types.

The types current were as follows:

Celts: In graves E1 only; in hoards and stray D1 and the Bohemian palstav C3. Three Hungarian battle-axes like Fig. 148 a-b, decorated in characteristic style, have been found stray in Silesia alone.<sup>1</sup>

Ogival daggers, generally of type B2,<sup>2</sup> are not uncommon. One grave contained a bronze-hilted example.<sup>3</sup> Swords are represented by only one complete specimen found alone, probably in a grave, at Dahmsdorf<sup>4</sup> near Breslau (Pl. 2, C2). It illustrates Kossinna's Germanic type. Socketed spear-heads also occur; arrow-heads are still commoner. In grave 2 at Massel socketed bronze and barbed flint arrow-heads occurred side by side.<sup>5</sup>

Stone mace-heads, spheroid, vertically ribbed, or oval with horizontal facets, were still in use.<sup>6</sup>

The ornaments are mostly of Hungarian form. The bracelets belong to types C1,<sup>7</sup> C3,<sup>8</sup> B1,<sup>9</sup> and a special variant of B2 (B3).<sup>10</sup> Cylinders are very common,<sup>11</sup> both in graves and hoards; in hoards bracelet D1 is also found and there are many stray specimens. Hungarian again are girdle plates from Wojdal<sup>12</sup> and Namslau,<sup>12</sup> with a punched decoration in the style of Pannonian ware and the plume and star decoration on the pins (Pl. 12, E1).

Western influence is represented by a single wheel-pin from Mogilno in Poznan<sup>13</sup> and a gold ear-ring of British type from the hoard of Wasosz (Szubyn).<sup>14</sup>

Besides these foreign types a series of native forms was created. Many are traceable to Early Bronze Age or Aunjetitz forms such as the heavy bracelets E1, wire types like A4, and pins like A0 and A4.

<sup>1</sup> von Richthofen, pl. 25, k-m.

<sup>2</sup> *PZ.* i, p. 56; *Przeg A.* ii, fig. 17, and p. 281, pl. ix, 2.

<sup>3</sup> *SV.* iv, p. 6; von Richthofen, pl. 2, g.

<sup>4</sup> *SV.* iv, p. 8; *Mannus*, iv, p. 278, cf. *SV.* v, p. 4 for a later type.

<sup>5</sup> *SV.* vi, figs. 17-18; the bones had been burnt and the whole grave may really belong to the Late Bronze Age.

<sup>6</sup> *SV.* vi, p. 13, fig. 28; von Richthofen, pl. 2 i.

<sup>7</sup> Kunowo, Dist. of Srem; *Przeg A.* ii, p. 199 and figs. 40-2.

<sup>8</sup> Lahserwitz; von Richthofen, pl. 16, 3.

<sup>9</sup> Seschwitz, *ibid.*, pl. 16 c.

<sup>10</sup> Lahserwitz.

<sup>11</sup> Wojdal II, *Mannus*, viii, p. 246; Punitz; *ibid.*, p. 263; also in hoards as Rudna and Grodnica (Gostyn), *ibid.*, pls. vii-x.

<sup>12</sup> *Mannus*, l. c., pl. vi, 1; von Richthofen, pl. 16.

<sup>13</sup> *Przeg A.* ii, p. 173, fig. 45.

<sup>14</sup> *Real.* ii, p. 382; Kostrzewski assigns this to phase A.

Pin E<sub>4</sub> represents the Silesian solution of the problem of the eyelet. It may be derived from A<sub>4</sub>.<sup>1</sup> The vertical perforation is characteristic and survives in the derivative form E<sub>5</sub> which is generally Late Bronze Age, but is found already in an inhumation grave with a Middle Bronze Age dagger.<sup>2</sup> Other pin-forms common beyond the Oder are E<sub>1</sub>, E<sub>3</sub>, and E<sub>2</sub>. Von Richthofen further assigns to this period some 'shepherd's crook' pins—a type assigned by Reinecke in South-West Germany to phase D of the Bronze Age—and pins terminating in a spiral.

Neither spiral-ended finger-rings nor tutuli nor yet heart-shaped pendants seem to have been worn in our area. The neck of one skeleton was, however, encircled by a torque resembling A<sub>1</sub> in shape but twisted. Von Richthofen suggests that the twisting imitates the effect of the thin wire sometimes wound round ingot torques.<sup>3</sup> Amber and gold beads were found in one grave.<sup>4</sup>

Apart from the proto-Lausitz ware of Silesia, described in Chapter XVI, pottery is rare in the barrows east of the Oder. In Poland we find deep bowls reminiscent of the Nordic funnel-necked beaker,<sup>5</sup> tulip beakers recalling Kozłowski's 'neolithic' Iwno type,<sup>6</sup> pedestalled bowls,<sup>7</sup> and rough pots with horizontal handles or vertically pierced ledges just below the rim,<sup>8</sup> and other forms derivable from Aunjetitz shapes.<sup>9</sup> Ornamentation is rare. Interesting is the pattern on a vase from Wojdal,<sup>10</sup> identical with the regular design on Lower Oder Corded Ware and Marschwitz vases, and incised hanging loops on vases from Jasionna Klekot.<sup>11</sup> Quite exceptional is a rough vase from Obrath in Silesia ornamented with a band of stamped triangles rather in the manner of fretwork ware.<sup>12</sup>

In view of the links with late neolithic cultures afforded by the pottery, it may be assumed that the population responsible for the Tumulus culture east of the Oder was descended from neolithic stocks as in Bavaria and on the Rhine. But as there, an admixture with the Aunjetitz folk is obvious.

The new formative influence expressed in the Middle Bronze

<sup>1</sup> Seger, *PZ.* i, pp. 61 f.

<sup>2</sup> von Richthofen, pl. 2 (Krehlau).

<sup>3</sup> *op. cit.*, p. 79 and pl. 23.

<sup>4</sup> *SV.* vi, p. 12 (Massel).

<sup>5</sup> *Przeg. A.* ii, p. 269, fig. 24 (Krostoszyn 35).

<sup>6</sup> *Mannus*, viii, p. 246, fig. 5 (Wojdal); cf. Kozłowski, *Młodsza*, p. 38, pl. vi, 12.

<sup>7</sup> *Przeg. A.* ii, p. 264, fig. 11; von Richthofen, pl. 2 k.

<sup>8</sup> *Przeg. A.* ii, p. 281, fig. 1 (Jasionna-Klekot).

<sup>9</sup> *Przeg. A.* ii, p. 170.

<sup>10</sup> *Mannus*, viii, p. 247, fig. 4.

<sup>11</sup> *Przeg. A.* ii, p. 281, fig. 10.

<sup>12</sup> von Richthofen, p. 20 and pl. 3.



Age types obviously came from Hungary. It is not certain that this influence was transmitted across Moravia, for the particular types in question are rare there. On the other hand, a series of hoards spreading all across Little Poland to the Carpathians<sup>1</sup> suggest that intercourse with Hungary was maintained by way of the San, the Apple Tree Pass, and the Upper Tisza; in fact it is precisely in North-Eastern Hungary that the types represented in Poland and East Germany were really at home. Quite what attracted Hungarian bronzes in this direction is uncertain; they reach the Lower Oder so that Danish amber seems a likely commodity for exchange. But only one amber find has hitherto been recorded in the Middle Bronze Age. But behind all foreign influence there was of course the persistence of the local Early Bronze Age tradition.<sup>2</sup>

<sup>1</sup> See Kostrzewski's map in *Real.* ii, for massive forms of bracelets; Seger, pl. 189. *Altschl.* i, pp. 10 f.

<sup>2</sup> Exemplified, e.g., in the preference

# THE URNFIELDS OF LAUSITZ TYPE EAST OF THE ELBE

## I. PROTO-LAUSITZ GROUP

AMONG the older Hungarian urnfields are a few graves which do not fit into any of our five geographical groups. On the other hand, graves with a similar furniture are known farther north in Lower Austria, Moravia, and Silesia. The interments in question are distinguished by the following ceramic types :

1. The urn has a plump body and a cylindrical neck with two small handles joining neck and shoulder (as opposed to the shoulder-handles of the Hercynian tumuli). This type is known from Bilisics near Szeged and Apáthi Puszta in Tolna County (Figs. 173, 175).<sup>1</sup> The same type recurs in Silesian graves<sup>2</sup> and, with a different ornamentation, in Moravia.<sup>3</sup> At Bilisics another type of urn with cylindrical neck but ornamented with plastic ribs was also in use. Parallels can be cited from Rács Egres in Tolna County<sup>4</sup> and the urnfield of Egyek in Hajdu (Fig. 174).

2. A regular accessory vase in the two Hungarian sites was a small mug with a band handle descending from the rim of the funnel-shaped neck (Fig. 175 b). This type of mug is common in Southern Moravia,<sup>5</sup> and appears also in the Bohemian tumuli where Kossinna calls it the 'Illyrian jug'.<sup>6</sup> It has many analogues in Silesia.<sup>7</sup>

3. A similarly shaped jug, but standing on three wart feet, was associated with the foregoing types at Apathi Puszta, and recurs in a Middle Bronze Age grave at Regelsbrunn in Lower Austria<sup>8</sup> (Fig. 176).

4. The urns might be covered with various simple dishes.

Vases of types 1 and 2 are always decorated with smooth conical warts (in Moravia the warts may be replaced by flutings). The same decoration is found on other Middle

<sup>1</sup> Finds in museums of Szeged and Szekszard. Cf. Wosinski, *TT.*, p. 376.

<sup>2</sup> von Richthofen, pls. 9, c-d; 11 a, c.

<sup>3</sup> Němčice, *Pravěk*, 1926, pl. III.

<sup>4</sup> Wosinski, *TT.*, pl. cxvi and p. 493; there is no evidence of any connexion between these pots and the hoard

found in the same village.

<sup>5</sup> Němčice, Koberice. Cf. Gottwald, *PSPP.*, pp. 65 and 68.

<sup>6</sup> Schránil, *Böhmen*, pl. xxiv, 1, 5.

<sup>7</sup> von Richthofen, pls. 12b, 13e.

<sup>8</sup> *Völkerkunde*, 1926, p. 27, fig. 3.

Bronze Age vessels from East Central Europe, for instance on a pot with cylindrical neck and wide brim from an inhumation grave at Leobersdorf in Lower Austria.

*Burial rites* The graves in which the foregoing types occur are not uniform in respect of funerary ritual. Bilisics is described as an 'urnfield'. At Apáthi Pusztá, though the urn was full of ashes, there was also a skeleton.<sup>1</sup> The corresponding Austrian graves contained skeletons. In Moravia cremation was the invariable practice, but in Silesia that rite subsisted side by side with inhumation in the contracted posture—once under a barrow!

*Bronzes* The metal furniture<sup>2</sup> of the tombs was no more uniform. In Hungary the usual Middle Bronze Age types were found and the Moravian graves contained a similar inventory. On the other hand, the graves of this group in Silesia were furnished with the local types of pins and pendants described on p. 316. Hence the unity of the group may be questioned. It is mentioned here because the pottery occupies a typological position midway between the Early Bronze Age wares of the March-Waag region and the Lausitz ceramics that principally concern us in this chapter.

*Chronology* Whether the group really occupies in time the position assigned to it typologically is less easy to determine. The pin B1 from Apáthi Pusztá is certainly an old type, whereas the bracelet G1 from the same grave is, in Wurtemberg, assigned by Kraft to his phase E!

*Affinities* In any case the pottery may be readily derived from the Early Bronze Age wares of Slovakia. The urn is descended from the Veselé amphora (Fig. 140f), and the jugs from those found at the same site (Fig. 140b).<sup>3</sup> The three feet of type 3 may be connected with the cylindrical tripod cups of the same group. Technically the two fabrics correspond exactly. The wart ornament existed in a rudimentary form in all Aunjetitz wares, and even the conical variety that meets us in the Proto-Lausitz group is found on some Moravian vases.<sup>4</sup>

<sup>1</sup> Wosinski, *TT.*, p. 376, only mentions two cremation burials, and omits all reference to the skeleton and bronzes exhibited with them in the museum.

<sup>2</sup> Apáthi Pusztá: pins AB2, B1, B4; bracelets, B1, C1, G1; cylinder B1; tutulus, A2; and knife, B1. Regels-

brunn: pin B4; cylinder B1. Koberice: pin B6; bracelet F1, fragment with spiral end; and a socketed arrow-head. Pasohlavky without pottery: pin B4, bracelet C1, tutuli A2 and A3.

<sup>3</sup> Cf. Kostrzewski, *Przeg A.* ii, p. 170, and figs. 37-8.

<sup>4</sup> Cf. p. 232 above.

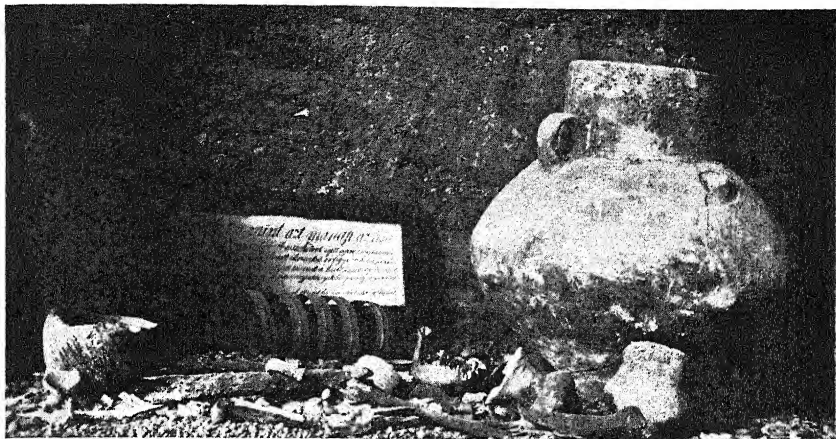


FIG. 173. Grave at Apáti-pusztá. M. Szekszárd

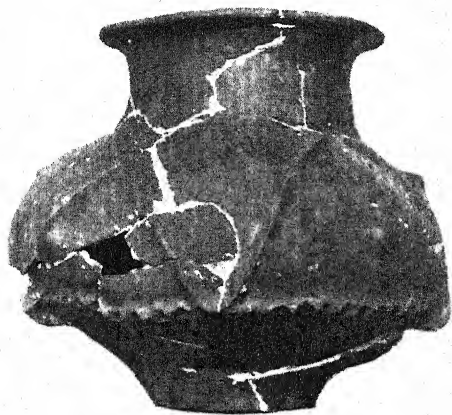


FIG. 174. Urn from Bilisiés. Varosi Muzeum, Szeged

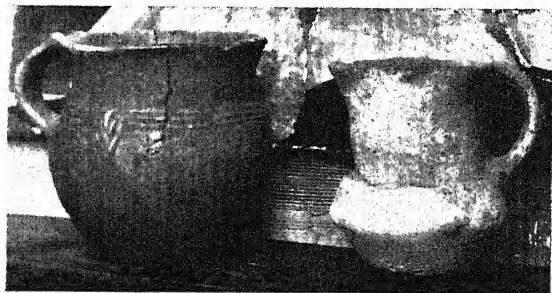


FIG. 175. Accessory vases, Bilisiés. Varosi M., Szeged



FIG. 176. Vase from Regelsbrunn. M. Carnuntum



FIG. 177. Cylinder from Regelsbrunn. M. Carnuntum



FIG. 178. Lausitz ossuary and accessory vases. Gemeinlebarn, Grave 5. Naturhistorisches M., Vienna.  $\frac{1}{8}$

## II. THE LAUSITZ CIVILIZATION

By the end of the Bronze Age the whole area between the Elbe and the Vistula, the lowlands of Moravia, and portions of Lower Austria and Slovakia are covered with urnfields of the Lausitz type. In the civilization represented therein four main phases can be distinguished, termed by Seger<sup>1</sup> A, B, C, and D respectively; Seger's phases correspond to what Czech archaeologists<sup>2</sup> term the Earlier and Later Lausitz, Silesian and Plátenice cultures in Bohemia; so in North Germany<sup>3</sup> the later phases have been christened after type sites: Aurith, Göritz, and Billendorf respectively. We are at the moment concerned only with the two first.

Divisions

Of the first phase we know with certainty only the graves and their contents. The burial rite was always cremation with the careful ceremonial that we have already described in Hungary. The body was burned near the cemetery in an *ustrinum*, marked to-day by an area of ashes a metre or more square, and sometimes protected by a low wall of dry masonry.<sup>4</sup> The ashes were carefully purified from charcoal and cinders and placed in a cinerary urn. As in Hungary, a hole (*Seelenloch*) was bored through its walls, generally its base, to allow the soul to escape. As in Hungary too, the ossuary was covered with a dish and deposited in the earth with many accessory vases.

Phase A burials:

Normally the grave was dug in the bare earth; more rarely a cist was built of stone slabs.<sup>5</sup> In the Lausitz<sup>6</sup> and Silesia<sup>7</sup> the grave might be marked by a barrow. In the former area the mound was sometimes 1½ m. high and might measure 9 m. across. The urns lay in shallow depressions in the natural soil, protected by a pile of stones. Several such graves might be covered by the same barrow. But flat graves are quite as common as tumuli even here. In Bohemia<sup>8</sup> and Moravia<sup>9</sup> barrows are quite exceptional. It is curious that some Mora-

Cremation

Graves  
Barrows  
and flat  
graves  
Barrows

<sup>1</sup> *SV.* viii (1924), pp. 1 ff.; *Real.* vii, pp. 251 ff. Note that the phases distinguished by Jahn at Osswitz (*Mannus, Ergänzungsband*, iii, pp. 31 ff.) and labelled by him A, B, and C correspond to Seger B, C, and D respectively.

<sup>2</sup> Buchtela in *JKZ.* iv (1906), pp. 4 ff.

<sup>3</sup> *ZfE.* xxxv (1903), pp. 161 f.

<sup>4</sup> *ZfE.* xviii, p. (722), &c.

<sup>5</sup> *Mannus*, xix. 1927, p. 31.

<sup>6</sup> *ZfE.* xx (1888), pp. (253) f.; *Niederl. Mitt.* 1889, p. 305; 1890, p. 440; *Mannus*, xix (1927), p. 38; Schuchhardt, *Alteuropa*, p. 287.

<sup>7</sup> Mertins, *Wegweiser durch die Urgeschichte Schlesiens*, p. 51. Sometimes older barrows were reused for Lausitz interments; cf. *SV.* v, p. 36.

<sup>8</sup> Pič, iii, p. 10; Schráníl, *Böhmen*, p. 139.

<sup>9</sup> *Pravěk*, 1909, p. 121.

vian barrows of Lausitz B type form parts of the late Corded Ware or Marschwitz cemeteries!

*Pottery* The chronology and the very definition of the Lausitz culture are mainly dependent upon its pottery, which must now be described. The fabric is uniformly good, the surface, except in pots of types 7 and 8, being slipped and polished. The earlier specimens, especially in the Lausitz, are reddish in colour; in a few early cemeteries in Bohemia and Silesia dark-faced wares occur. The main forms are as follows:

*Cinerary urns* 1. The ossuary is biconical in form and, as a rule, about 22 cm. high (Fig. 178 d). The two cones always meet at a sharp angle in early specimens. The lower cone may be ornamented by scratched lines radiating from the base. Very rarely there is an incised band just above the keel, but normally the upper half is plain.

2. In a less usual type of urn the upper cone has been flattened and a short neck super-added (Fig. 179 a).

3. The urn was covered with a dish (Fig. 182 a) or shallow cup.

*Accessory vases* The most common accessory vases may be divided into five types.

4. Large amphorae ornamented with shoulder-warts, and patently related to the proto-Lausitz form (Fig. 180 c).

5. Terrines with cylindrical necks and broad rims, ornamented with four or six conical warts on the belly.<sup>1</sup>

6. Jugs with warts on the belly, resembling in shape those of the proto-Lausitz group (Fig. 181 c).

Forms 4, 5, and 6 often stand on low pedestals.

7. Tall pots with out-turned rims (Fig. 181 b) and smooth or 8. roughened bodies.

*Wart ornament* The method of decoration that distinguished early Lausitz pottery is the use of the large conical warts, rising out of circular depressions to sit on the shoulder of vases of types 4 to 6. With these may be combined flutings or plastic ridges.

*Bronzes* It was at no time the custom of the Lausitz people to deposit ornaments or weapons in their graves, and so it is very hard to say what forms were in use at the period of the earlier Lausitz culture. However, occasionally flint or socketed bronze arrow-heads, or celts, perforated axes, and mace-heads of stone<sup>2</sup> have been found in cemeteries. Ornaments are only slightly less rare, but pins E6, E8 (Silesia), E5, D3, and D5 may

<sup>1</sup> For the form compare the Aunjetitz Lower Austria, p. 320.

shape mentioned in note 8 on p. 232, <sup>2</sup> Cf. e.g. *ZfE.* xx, p. 200. and the pot from Leobersdorf in



belong to this phase,<sup>1</sup> and possibly even one Nordic fibula of type B2<sup>2</sup> may be as early.

The early Lausitz pottery of the type just described is virtually confined to the Lausitz and the adjacent part of Silesia. There are, however, outliers extending as far as the Saale westward, northward into Brandenburg, and eastward into Poznań. South of the Sudeten ranges a slightly later phase is represented in a large number of urnfields in Eastern Bohemia, while a few graves in Eastern Moravia<sup>3</sup> contained pottery with genuine wart ornament which, despite its darker fabric, might be placed here.

*Distribution*

The late Lausitz culture, represented by pottery of Seger's class B, seems to be a direct development of the foregoing, but has a much wider distribution. Map IX.

*Phase B*

The burial rite remains unchanged, and phase B is primarily distinguished by its pottery.

Pottery of class B is distinguished from its predecessor by a tendency to dark-faced fabrics, the softening down of the angular profiles current in phase A, and the replacement of the wart ornament by flutings; the warts survive only as inconspicuous nipples in the centres of concentric arcs. In Moravia and Slovakia graphite was coming into use for darkening the surfaces of vases. In addition to the flutings, bands of incised hatchings, alternating to form erect and inverted triangles, often encircle the urns and amphorae.

*Pottery*

*Fluting*

*Graphite slip*

South of the Sudeten the simple ossuary 1 tends to give place to type 2, which now acquires a rounded outline and often an exaggeratedly long neck.<sup>4</sup> The covering dishes have broad rims that may sometimes be decorated with flutings (turban-dishes) (Fig. 182a).<sup>5</sup> The neck of the amphora becomes swelling or conical; the handles of the jugs and cups often rise above the rims, and may show a V-shaped depression like the Hungarian *ansa lunata*. As new types appear pedestalled bowls and, at least in Czechoslovakia, spouted vases<sup>6</sup>—the feeding bowls of German archaeologists—and rattles. In Moravia theriomorphs already occur,<sup>7</sup> and some vases stand on human feet.<sup>8</sup>

*Forms*

*'Feeding bowls' and theriomorphs*

<sup>1</sup> *SV.* 1896, pl. 2; Seger, *PZ.* i, p. 62.

<sup>2</sup> *Jahrb. Mus. Völk.*, Leipzig, iii (1908/9), pl. xv, 32; the pin terminated in a spiral, not as usually in this type, in a club-head.

<sup>3</sup> Examples in Museum at Olomouc. These should perhaps really be assigned to class B.

<sup>4</sup> *SV.* viii, pl. II, 1; *Mannus Ergzbd.* iii, pl. 1, 2; Pič, iii, fig. 4.

<sup>5</sup> *SV.* viii, pl. II; *ZfE.* xxxv, p. 168, fig. 8.

<sup>6</sup> *PA.* 1919, p. 36, fig. 80, &c.

<sup>7</sup> *Pravěk*, 1908, p. 100, fig. 15.

<sup>8</sup> *Real.* ii, p. 88; Schráníl, pl. xxvii, 33.

The bronzes,<sup>1</sup> though still rare, allow us to connect with the later urnfields a number of hoards, and several settlements are known as well as the cemeteries. Hence it is possible to give a fairly complete picture of the Lausitz culture in its mature phase.<sup>2</sup>

*Distribu-  
tion*

The urnfields and settlements of the Lausitz B type occupy the greater part of Germany east of the Elbe and south of the Spree, but the majority are still concentrated in Lausitz (no less than two hundred and fifty cemeteries have been identified in Oberlausitz alone!).<sup>3</sup> Farther east is a series in Central Poland, extending as far as the Vistula near Warsaw and the Pilica.<sup>4</sup> South of the Sudeten there is a compact group in Bohemia, along the Elbe and its northern tributaries, connecting with an extensive chain of urnfields in Eastern Moravia, centred round Olomouc, that leads to a mixed group in Lower Austria.<sup>5</sup> Farther to the east there are isolated but quite extensive cemeteries in Central Slovakia.<sup>6</sup> Clearly the Lausitz folk did not avoid country that to-day would be forest, presumably because in their days, owing to the Subboreal dryness, there were no forests there. At the same time a distinct preference for valleys is observable, and the settlements seem to cluster along trade routes. The outposts of the culture are pushed forward in a significant way towards the metalliferous regions of Slovakia.

The extensive cemeteries, many of which cover several periods and include many hundred graves, evidently belong to a sedentary population. At the same time the huge number of the urnfields shows that the communities frequently sent out daughter colonies (Sacred Springs), or broke up into smaller groups.

*Settle-  
ments* The settlements themselves, so far as they have been explored, entirely confirm the impression produced by the

<sup>1</sup> Knives 3 (Kunětice, *PA.* 1919, p. 136) and D4 (Letná near Prague, *Pič*, iii, fig. 11); Italian sickles (*ibid.*); socketed spear and arrow-heads; fibulae B3 with flat oval bow (North Bohemia, *ZfE.* xlv, pp. 739, 752), and B5 (Brozanek, *ibid.*, Hrubčice in Moravia, Gottwald, pl. ix, 13); pins E6, E7, E8, E9, and spiral-headed—as an exception A4 from Kostelec; bracelets like A5 and B2 (but with only three ribs, Gottwald, pl. viii, Mostkovice, Mor.); flat buttons with a loop on the back, and the breast-ornament of fig. 183

(*ibid.*, pl. ix, 3; *Pravěk*, 1908, p. 101); gold rings like 1 a, &c.

<sup>2</sup> See p. 323, note 8.

<sup>3</sup> *Mannus*, xix, p. 27.

<sup>4</sup> *Przeg. A.* ii, pl. viii c; *WA.* v (1920), pp. 48 ff.; pp. 155 f.

<sup>5</sup> Menghin, *Niederösterreich*, p. 20.

<sup>6</sup> Novák in Nitra, and Dominiky, Bardinova, and Madovarcy (Cty. Hont), M. Turč. Sv. Martin, probably part of the finds from Felső-Kubin (Arva) in North Slovakia belong here. Cf. *MAGW.* xiv (1884), pp. 196 f.

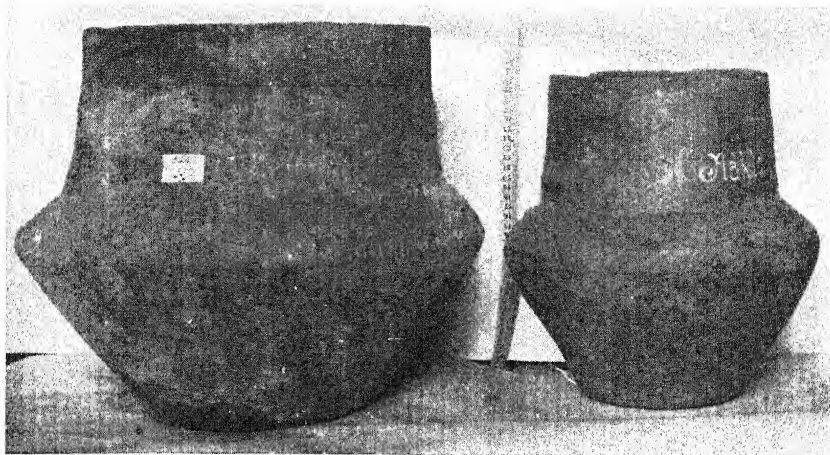


FIG. 179. Ossuary and amphora, Náklo. M. Olomouc



FIG. 180. Early Lausitz amphora and terrine, late mug. Brit. Mus.



FIG. 181. Amphora, Domazalice, pot, Mezice, cup, Náměšť. M. Olomouc



FIG. 182. Turban dish, Woischwitz,  $\frac{1}{8}$ , and Lausitz B amphora, Grabschen,  $\frac{1}{4}$ . M. Breslau

cemeteries. The Lausitz folk lived in regular villages which were not, however, at the period under discussion protected by any fortification.<sup>1</sup> Thanks principally to the careful excavations of Dr. Kiekebusch at Buch near Berlin,<sup>2</sup> the houses constituting the villages are well known. The Lausitz dwellings were log cabins planned like a Mycenaean *megaron*, with a pillared entrance porch on the short side (average dimensions  $6.6 \times 3$  m<sup>2</sup>). Traces of wooden thresholds were observed between the pillars of the porch and at the entrance to the living-room behind it. The hearth stood in the main room, and often a small pit had been dug beside the hearth as in the similar houses at Erösd. In other houses a large store jar had been sunk in the floor.

'Log  
cabins'

The walls consisted of horizontal logs supported by upright posts, the interstices being filled up with mud plaster. The roof must have been gabled. The houses do not seem to have been laid out according to any definite plan, but Kiekebusch traced a curious 'compound' consisting of a large house of the usual plan by the side of which eight small, one-roomed huts had stood.<sup>3</sup>

The Lausitz people were certainly cultivators, as remains of grain and querns in the houses, and the sickles so commonly discovered in the hoards, and sometimes even in the graves, demonstrate. Naturally they possessed domestic animals. Among these is undoubtedly to be reckoned the horse. Horn cheek-pieces from bits, similar to those from the Hungarian villages (Fig. 160), have been found in several Lausitz settlements.<sup>4</sup>

Agricul-  
ture

Horses

For fishing, bronze fish-hooks were used.

The distribution of the settlements along trade routes and the number of foreign, especially Hungarian, types found in the area of the Lausitz culture show that its authors engaged in active and regular trade. The hoards seem in many cases to have belonged to travelling smiths who went about collecting old metal in exchange for new implements or repairing worn-out tools on the spot; for the hoards consist largely of old and worn ornaments, weapons, and utensils, collected for recasting, or unfinished products. An indication of the wealth acquired by commerce is afforded by great hoards of

Trade

Travel-  
ling smiths

<sup>1</sup> *Mannus Ergzbd.* iii, p. 32; *Mannus*, xix, pp. 39 f.

<sup>2</sup> *Die Ausgrabung des bronzzeitlichen Dorfes Buch bei Berlin*, 1923, pp. 51 ff.

<sup>3</sup> *Ibid.*, p. 66.

<sup>4</sup> *MAGW.* xxv (1895), p. 40 (Gross Žernosek, wrongly classed by Weinzierl as neolithic); Kiekebusch, *l.c.*, fig. 20 (Buch).

gold, generally in the form of wire, from Silesia, Bohemia, and Moravia.<sup>1</sup>

*Metal-lurgy* But the Lausitz people were also industrialists and, in particular, metallurgists. The settlements and even the graves have yielded moulds, generally of sandstone. The hoard of Nová Ves in Bohemia<sup>2</sup> included a bronze anvil and three two-piece moulds of bronze for palstavs. They can only have been used for casting the wax models used in the *cire perdue* process. And if the Lausitz folk were not themselves miners, they took care to lay hands on the supplies of metal, as the extension of the Lausitz urnfields into Central Slovakia very clearly indicates.

*Creation of the socketed celt* At least one important innovation may possibly have been due to the Lausitz smiths—the creation of the socketed celt. We have seen that the intermediate stage between the Nordic prototype E<sub>3</sub> and the true socketed form E<sub>6</sub>, has so far only been discovered in Silesia, and that the Lausitz province was in close contact with Hungary where core-casting had long been practised. Thus the pre-conditions for the creation of the new implement that was to enjoy such a wide popularity later, were fulfilled within the Lausitz province.

It is likely that the Lausitz folk did use celts of types E<sub>6</sub><sup>3</sup> and C<sub>4</sub> which occur in a few hoards. B<sub>5</sub><sup>4</sup> is far more common, as is C<sub>3</sub>. Hungarian battle-axes of type A<sub>3</sub> appear as imports in the hoards.<sup>4</sup>

*Knives* Other metal tools in use were knives<sup>5</sup> of several types and sickles of the button and Italian forms. Some Saxon graves contained a curious sort of razor, apparently related to the Germanic series;<sup>6</sup> otherwise this implement was not yet in use in the Lausitz province.

*Stone implements* Besides the metal tools the settlements have yielded many picks, hammers, and awls, and other artifacts of bone and horn. More remarkable is the occurrence of celts and bored hammer-axes of polished stone both in graves and settlements.<sup>7</sup> Schráníl thinks that the celts from the graves were old artifacts picked up and used as charms by the Bronze Age folk. As a matter of fact the Lausitz people, like their Hungarian contemporaries, indubitably used and manufactured bored hammer-axes, and

<sup>1</sup> *SV.* ii (1902), pp. 1 ff.; *PA.* 1913, pls. III–IV; Stocký, *BAB.*, pl. XLI.

<sup>2</sup> Schráníl, *Böhmen*, p. 145.

<sup>3</sup> *SV.* iv, p. 33 (Hoard of Protsch, Silesia).

<sup>4</sup> Schráníl, *Böhmen*, p. 145, pl. xxviii,

1–3.

<sup>5</sup> Pič, iii, fig. 11; *PA.* 1919, p. 36.

<sup>6</sup> *Ůb. M. Völk.*, Leipzig, iii (1908/9), pl. xv, 25.

<sup>7</sup> e.g. Kiekebusch, *op. cit.*, p. 76.



very probably employed polished celts too. Clay models of hammer-axes were made for funerary use in North Bohemia<sup>1</sup> and elsewhere.

The principal weapon was the bow, the arrows being tipped with bone,<sup>2</sup> flint, or socketed bronze heads. Less common were spears with socketed heads. The spear-head has the lanceolate form of type 2. Swords occur only in hoards and belong almost exclusively to types C2 and C3.<sup>3</sup> Weapons

The commonest ornaments were pins of types D6, D3, E6, E7, E8, and in Silesia E5 (in order of frequency). Two-membered fibulae of type B3 begin to appear sporadically as accidental elements in Lausitz cemeteries from Silesia to Lower Austria,<sup>4</sup> Pins  
Fibulae

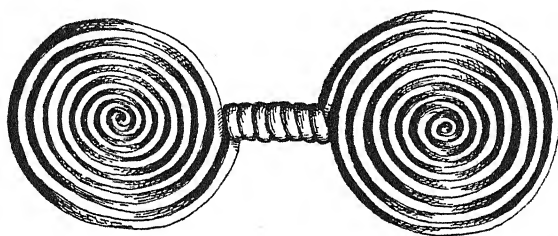


FIG. 183. Double spiral ornament of bronze wire.  $\frac{1}{2}$

though the form probably originated on the northern borders of the Lausitz province in East Germany.<sup>5</sup> In Moravia the type was transformed into B3 a, under the influence of North Italian and Hungarian forms like A4. In addition a few variants of B5 are known from Saxon and Bohemian cemeteries.<sup>6</sup> In contrast to the numerous Northern types, which extend as far as Austria, the southern series is represented only by a single example of A4 from Dominiky in Slovakia.

Perhaps akin to the pins is the ornament illustrated in Fig. 183 consisting of a narrow coil of bronze wire terminating in two big spiral disks. It occurs in Lausitz graves<sup>7</sup> and hoards,<sup>8</sup> and also in Hungary and Bosnia. It may have been a breast-ornament,<sup>9</sup> and perhaps reveals the prototype of the

<sup>1</sup> Examples in M. Hradec Králove from Silesian period.

<sup>2</sup> e.g. *Buch*, fig. 18; *MAGW.* xxv, p. 37, fig. 47.

<sup>3</sup> e.g. *Prestavlk*; *JfA.* i, p. 106, pl. v; *Real.* ii, p. 90.

<sup>4</sup> *ZfE.* xlv, pp. 750 ff.; Gottwald, pl. ix, 13 (Hrubčice, Mor.); *Mannus*, iv (1912), p. 175, fig. 1; Menghin, *Niederösterreich*, pl. VIII, 4.

<sup>5</sup> Beltz's statistics, though incomplete for the south, enumerate 58 specimens from beyond the frontier as against 22 within it.

<sup>6</sup> *ZfE.* xlv, pp. 712 and 738; Pič, iii, fig. 1; Schráníl, p. 153.

<sup>7</sup> Gottwald, pl. ix, 3; Schráníl, pl. xxviii, 23.

<sup>8</sup> e.g. Protsch, Silesia, *SV.* iv, p. 33

<sup>9</sup> Cf. Seger, *SV.* iv, p. 36.



spectacle brooch. The commonest bracelet is the massive form with overlapping ends, but A<sub>4</sub> is still sometimes found.

*Torques* A torque like A<sub>1</sub>, but wrapped round with wire, was found in a grave at Tynice on the Elbe in Bohemia while others are simply twisted.<sup>1</sup> Disks with a loop on the back<sup>2</sup> are very common; perhaps they served as buttons.

Gold is not uncommon in the Bohemian hoards where it generally occurs in the form of wire. The extraordinary plaited gold ornaments like Fig. 184 belong to this pure Lausitz period.<sup>3</sup>

*Amber* Amber was found in one grave near Hradec Králove (Königrätz). Wolves' teeth and glass beads (blue and yellow) too were occasionally worn on necklaces.

*Bronze vases* Finally, a few graves and hoards have yielded smooth cups of hammered bronze,<sup>4</sup> and later a variety with ornamental bosses appears.

*Chronology* The poverty of metal finds makes the chronology of the Lausitz culture doubtful. It is generally assigned as a whole to Montelius III = Reinecke D.<sup>5</sup> This would agree with the Hungarian evidence: the pottery of Tószeg C seems parallel to early Lausitz ware, while in D types allied to the fluted ware of Seger's class B intrude; the Macedonian connexions date the latter to the eleventh century.

At the same time influence from the Lausitz culture seems detectable in South German and Tyrolese graves that belong undoubtedly to Reinecke D (p. 350 below). Conversely, late Lausitz types like fibula B<sub>3</sub> belong in South-Western Germany<sup>6</sup> and in Bohemia<sup>7</sup> to phase E (Reinecke's Hallstatt A). We conclude that the Lausitz cultures as a whole belong to the Late Bronze Age, though their roots may very likely go back to the preceding phase.

*Origin* The origin of the Lausitz culture has puzzled all archaeologists. The earlier investigators, struck with the similarity between its wart ornament and that of Tószeg and Pilin, thought of a Hungarian origin.<sup>8</sup> Schuchhardt,<sup>9</sup> on the other hand,

<sup>1</sup> Schráníl, p. 154.

<sup>2</sup> e.g. (Gottwald, pl. VIII), Mostkovice, Pič, iii, fig. 1.

<sup>3</sup> Schráníl, *Böhmen*, p. 144.

<sup>4</sup> Rohow (Ratibor), *SV*, iv, p. 21; Velatice (M. Brno). Kraft, *Mannus Ergänzbd.* v, p. 45, gives a list of sites. He thinks the smooth type originated in East Central Europe.

<sup>5</sup> Reinecke, *Kbl. f. Anthropol.* 1902, p.

27; *AuhV.* v, p. 215; Seger, *Real.* vii, p. 253.

<sup>6</sup> Beltz, *ZfE.* xlv, p. 675.

<sup>7</sup> With spectacle and harp fibulae at Lžovice (*PA.* 1914, pl. 1); with embossed bronze cups at Velatice (M. Brno).

<sup>8</sup> Undset, *Eisen*.

<sup>9</sup> e.g. *Alteuropa*, pp. 286 f.

proposed to derive it directly from the neolithic Walternienburg culture, and from its earliest phases at that! Kossinna<sup>1</sup> first recognized that it was rooted in the native Aunjetitz culture, and further researches by von Richthofen<sup>2</sup> have confirmed his view.

The distinctive wart ornament was present, albeit in a rudimentary form, on Aunjetitz pottery. That culture possessed further, dishes, amphorae (Fig. 140),<sup>3</sup> terrines, and mugs from

*Connections  
with Aun-  
jetitz*

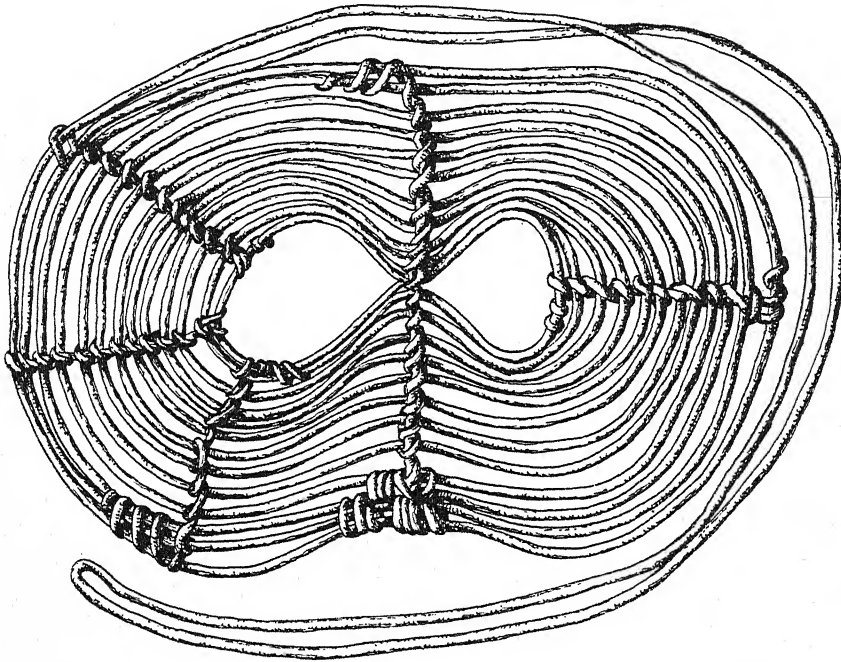


FIG. 184. Plaited ornament of gold wire, Königgrätz. After Pič. †

which our Lausitz forms can be derived; even the ossuary might be connected with a deep bowl with scarcely perceptible shoulder from Šarka in the Jira collection.<sup>4</sup>

Moreover, the Lausitz culture was economically the heir of the Aunjetitz; it occupied a similar area in the lowlands, and rested on trade and industry. Even some of its bronzes carry on an Aunjetitz tradition.<sup>5</sup> That the Lausitz culture

<sup>1</sup> *Mannus*, iii, pp. 318 f.

<sup>2</sup> *Mannus Ergbd.* iv, pp. 140-3; cf. also Kostrzewski, *Przeg A.* ii, p. 170, &c.

<sup>3</sup> An example from Kobylisy near Prague, with no distinct separation be-

tween neck and body. Cf. also Pič, i, pl. v, 19.

<sup>4</sup> Cf. Stocký, *BAB.* viii. 6.

<sup>5</sup> Pins E<sub>5</sub> (Segar in *PZ.* i) and D6 (von Richthofen, p. 69); bracelet A4.

was descended in the last resort from that of Aunjetitz is then clear.

*Hungarian  
affinities*

It is equally clear that the older investigators were to a certain extent right in assuming a Hungarian element in the Lausitz culture. From that quarter must have come the horn bits, the rattles, theriomorphs and figurines, and the idea of core-casting, if the socketed celt were the creation of the Lausitz group. The wart ornament itself, that appears simultaneously in North Hungary (Tószeg C), the Lausitz, and South-West Germany, is immediately inspired by the cones that ornament Hungarian gold disks.<sup>1</sup> Its diffusion to those three areas was, as we have noted, due to the fact that all were supplied with copper from Slovakia. It was, indeed, to 'Hungarian' influence that the Lausitz culture owed its specific form.<sup>2</sup> But, if in this sense constitutive, the Hungarian influence is in fact external inasmuch as it can be explained by trade (trade comprising, of course, the activities of Hungarian tinkers or perambulating smiths). Its extent is not surprising since we have seen how closely the Oder valley was related to Hungary in the Middle Bronze Age, and the importance of Hungarian ores to surrounding countries.

The Lausitz culture was then the offspring of the Aunjetitz culture and the Hungarian Bronze culture. But where precisely was it born? Did it arise in the Lausitz and Silesia and spread thence southwards as the Czech school maintain? Or are the Lausitz cultures, as just described, the results of the convergent growth of the Aunjetitz cultures in Silesia, Moravia, and Lower Austria respectively? The latter view seems to be coming into favour to-day. Cervinka<sup>3</sup> points out very properly that the Lausitz pottery of Moravia approximates closely in technique to the local Aunjetitz ware. Indeed, some settlements like Hradisko near Kromeriz seem to have been occupied continuously from the Aunjetitz to the Lausitz phase. The same remark might very properly be made about the cemetery of Gemeinlebarn.<sup>4</sup> The nearest parallels to Lausitz forms belong to the eastern (Veselé) groups of Aunjetitz pottery rather than to the Bohemian, and the intermediate forms (proto-Lausitz) are found chiefly in the south-east. And it is frankly hard to see how the population of the Lausitz, seemingly exiguous in the Early Bronze Age,<sup>5</sup> should have rapidly

<sup>1</sup> Kossinna, *Mannus*, iv, p. 180.

<sup>3</sup> *Real.* ii, p. 94.

<sup>2</sup> It may have been transmitted either along the March or north of the Carpathians; for there was an outpost of the Egyek culture in Galicia.

<sup>4</sup> Szombathy, p. 75, denies the continuity.

<sup>5</sup> Cf. *Mannus*, xix, p. 23.

expanded by the Late Bronze Age to occupy or conquer the whole region from the Spree to the Ipoly.

That is implicitly what has been asserted by Buchtela:<sup>1</sup> the Lausitz cultures, in Bohemia at any rate, would have been introduced by a new people from across the Sudeten. And despite its difficulties that view seems correct. Both the earliest stages and the richest development of the true Lausitz culture are to be found in the eponymous area; its outposts in Moravia or Slovakia correspond only to what in Lausitz are later phases, and grow sparser the farther we move from that centre. And the Lausitz culture, whatever it may have borrowed from the south, took with it, as far as Lower Austria, certain types such as two-member fibulae that are certainly northern.<sup>2</sup> We shall see in Chapter XIX that in the Late Bronze Age of Hungary an intrusion must be admitted that can only be interpreted in ethnic terms.

Somehow or other the seemingly peaceful and sedentary peasants of the Lausitz were able to impose their vase forms, their types of ossuary, and their ornaments upon the survivors of Aunjetitz folk farther south. The Lausitz folk who had at first imported thence their gold and their copper now set out to control the supplies themselves—and succeeded.

### III. THE SILESIAN TYPE

A further evolution of the late Lausitz culture is represented by the urnfields of Silesian type in Silesia,<sup>3</sup> Western Poland,<sup>4</sup> Bohemia,<sup>5</sup> and Moravia.<sup>6</sup> This evolution is generally thought to have taken place in Silesia. The Silesian cultures south of the Sudeten would be due to fresh influences, probably fresh ethnic infiltrations from that quarter.<sup>7</sup> But there is certainly no sharp break in the cultural continuity and the change in the population if any must have been minimal.

The burial rite is unchanged save that the 'Seelenloch' was no longer left in the urns and that the ashes are less carefully purified. The settlements resemble those of the Lausitz group (log cabins), but some are fortified in Moravia. The urns (Fig. 186 a) seem to represent a development of type 2, in which, however, the opposition between body and neck is much less

*Ceme-  
teries and  
settle-  
ments*

<sup>1</sup> ŽZK. iv, l. c.

<sup>2</sup> And perhaps superseded the southern one-member type!

<sup>3</sup> SV. viii, pl. III; Real. vii, pl. 197.

<sup>4</sup> e.g. WPZ. ii, pp. 88 ff. (Skotniki

near Krakow).

<sup>5</sup> ŽZK. iv, pl. III.

<sup>6</sup> Pravěk, 1910, p. 144.

<sup>7</sup> Schráníl, Böhmen, p. 173; Červinka, Real. ii, p. 90, denies any ethnic change.

sharp, and the profile is gently rounded. Wide, flat lugs often project downwards just below the belly, while late specimens have two handles, borrowed from the amphora, sitting on the shoulder (Fig. 187). In Bohemia and Moravia the rim is usually everted. The urns were now covered with flat clay disks ornamented with finger-nail impressions.<sup>1</sup> The dishes are normally conical with an omphalos in the base (Fig. 188 b). The handles of the cups always rise well above the rim (Fig. 187 b). The pots 8 and 9 persist in slightly modified forms. Rattles and theriomorphic vases become general. As new shapes small flasks (Fig. 186 b) and drinking-horns appear.

Pottery  
forms

Graphit-  
ing

Ornament

The majority of vases of Silesian type are covered with a gleaming graphite slip.

The ornamentation consists of incisions or shallow groovings forming arcs (Fig. 186 c), or bands of alternating triangles as in the previous phase (Fig. 186 b). The dishes and shallower cups are often adorned with a sort of star pattern on the inside (Fig. 188 b). Some of the ossuaries exhibit a plastic band, set off with slashings, round the shoulder. This is an imitation of the metal torques worn by those whose ashes the urns were to contain. In the succeeding phase, indeed, the bronze torque itself was sometimes hung round the neck of the urn.<sup>2</sup>

It is clear that the form, ornamentation, and texture of the finer vessels are due to a deliberate imitation of metal, and bronze cups of 'Italic manufacture' are actually found both in graves and hoards.

Pins

The graves contain various small pins, of which D7 and E12<sup>3</sup> are the most conspicuous. South of the Sudeten<sup>4</sup> fibulae are represented by forms with flat oval bow,<sup>5</sup> and the spectacle brooch. Of the two-membered series a grave at Skalice near Hradec Králove contained what seems to be a variant of B1. Otherwise this series is now found mainly in hoards—often in giant specimens of B3.<sup>6</sup>

Fibulae

Twisted torques, like AB1, are everywhere characteristic. Bracelets like A4 and, in Moravia,<sup>7</sup> B2 were still worn, as were looped buttons and pendants, particularly C2 and C3.

Knives

Knives of various forms, particularly 13,<sup>8</sup> are found in the

<sup>1</sup> *Mannus Ergänzb.* iii, p. 38, pl. v, 1-3.

<sup>2</sup> *SV.* viii, p. 16.

<sup>3</sup> In Moravia, *WPZ.* iv, fig. 12.

<sup>4</sup> Hadersdorf, *WPZ.* iv, p. 40, fig. 12.

<sup>5</sup> Nepesice, Schráníl, p. 178.

<sup>6</sup> Cf., however, *WPZ.* ii, p. 95, fig. V, 3

(Skotniki) and Schráníl, *Böhmen*, p. 177.

<sup>7</sup> e.g. Ivanovice (M. Brno, grave), Dubicko (M. Olomouc, settlement).

<sup>8</sup> *WPZ.* iv, p. 38 (figs. 11-12) (Hadersdorf, Tršice); *Kunsthist. Atlas*, pl. 38, 2 (Stillfried); *MAGW.* lii (1922), p. (21); Skalice (M. Hradec Králove), &c.

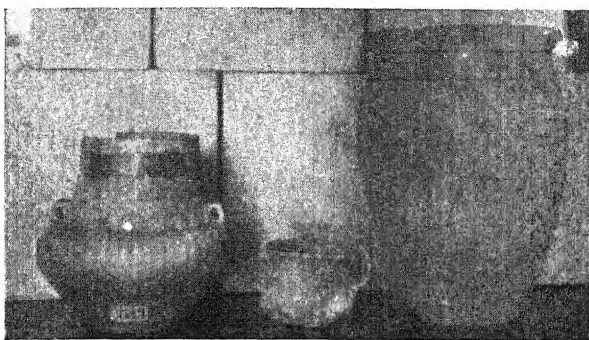


FIG. 185. Amphora cup and jar of Lausitz B type, Mohi pusztá. M. Košice

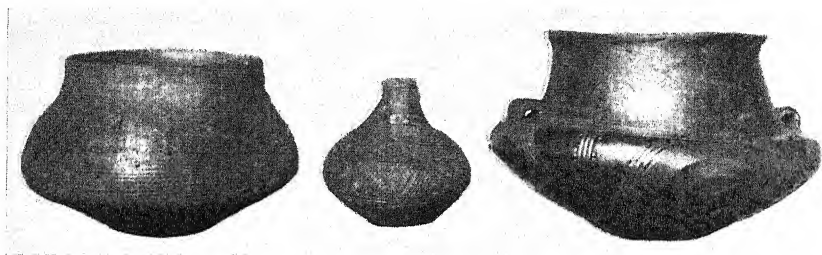


FIG. 186. Urns and flask, Silesian type, Horkau. M. Olomouc

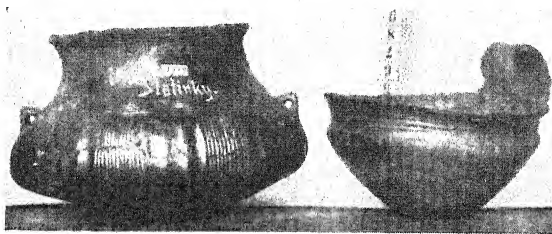


FIG. 187. Urn and cup, Silesian type, Slatinky. M. Olomouc

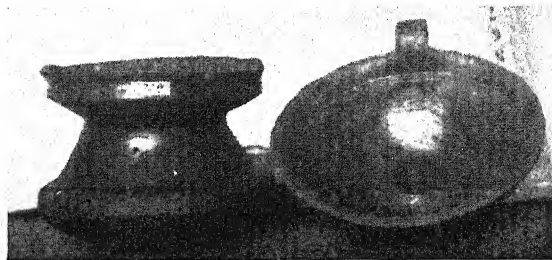


FIG. 188. Silesian dish and pot, Horkau. M. Olomouc





graves. Small razors with single-<sup>1</sup> or more often double-edged blades are sometimes found, but always in bad condition. The hoards contain many sickles of both forms and celts like E6 or C4. Apart from arrow-heads and a few spear-heads, weapons are rare even in the graves. The swords from hoards include B3, B5, and C3, all in late variants with leaf-shaped blades.<sup>2</sup> And a Hungarian mace-head from Hulin<sup>3</sup> deserves notice.

Perforated stone axes and clay models thereof were still in use. *Stone*

Pins<sup>4</sup> and other small ornaments of iron, and, very rarely, *axes*  
knives of the same metal were already being imported. *Iron*

The Silesian folk worked bronze as efficiently as their predecessors, but the transformation of their culture was due to trade. Amber beads are now found in the settlements, and *Amber*  
probably indicate that the 'eastern route'<sup>5</sup> leading to the East Prussian deposits was already carrying the traffic. It was through control of this commerce that Hungarian mace-heads and swords, bracelets like B2, pins like D8, and fibula like A3 were attracted from the foundries of Upper Hungary to Moravia. From the south-west came the true Hallstatt types of fibula and knife and, in the long run, the 'Italian' bronze vases, Mediterranean glass beads, and a new metal—iron.

Indeed, in the Silesian phase the cultural influence of the *Relations*  
south overcomes the ethnic stream from the north observed *with the*  
in the previous phase, and gradually transforms the culture of *south*  
East Central Europe into a province of the 'Hallstattian'. Naturally this transformation proceeded faster in the south than in the north. The large urnfields in Lower Austria (Hadersdorf on the Kamp<sup>6</sup> and Stillfried on the March<sup>7</sup>) already contain, besides Silesian shapes, Villanova forms<sup>8</sup> and types belonging to the Upper Danubian group.

Eventually peaceful penetration was followed by incursions of new folk, inhuming their dead, who have left their remains in the iron-workings of Byčiskala in Moravia<sup>9</sup> and even reach Bohemia. These Hallstatt intrusions give the lower limit of the Silesian culture, whose beginnings lie well back in the early Hallstatt A (Reinecke), or towards the close of our Period VI.

<sup>1</sup> Borstendorf (Mor.), *MAGW.* xxv, p. 204 (no. 305).

<sup>2</sup> Schráníl, p. 180.

<sup>3</sup> M. Olomouc.

<sup>4</sup> Even in Silesia, *Mannus Ergänzbd.* ii, p. 39.

<sup>5</sup> de Navarro, *Gř.* 1925 (2), p. 497. The majority of his finds seem later, but there are undoubted instances

from this period, e.g. at Dubicko near Olomouc.

<sup>6</sup> Naturhistorisches Museum, Vienna.

<sup>7</sup> Universitäts - Museum, Vienna. Much, *Kunsthist. Atlas*, pls. xxxviii, xxxix. Cf. Menghin, *Niederösterreich*, pp. 22 f.

<sup>8</sup> Hoernes, *Urgeschichte*, p. 477, fig. 10.

<sup>9</sup> *Real.* ii, p. 96.

## XVII

### THE NORTH ALPINE URNFIELDS

#### I

*Distribution*

AS soon as we cross to the west bank of the Elbe in Bohemia we enter an urnfield province that differs substantially from that just described. The earlier phases of the western culture are best represented in Lower Austria (Gemeinlebarn,<sup>1</sup> Paudorf,<sup>1</sup> Herzogenburg,<sup>2</sup> Gradl near Krems<sup>3</sup>), Upper Austria (Nöfing),<sup>4</sup> the Tyrol (urnfields round Innsbruck-Hötting, Müh-lau, Matrei, Wilten, Aldrans, Völs<sup>5</sup>), Upper and Lower Bavaria (especially Grünwald near Munich<sup>6</sup>), and Central Bohemia (the Knoviz-Milaveč culture of Czech archaeologists<sup>7</sup>). It has early outposts all over Switzerland as far as the Aar,<sup>8</sup> in Western Hungary (Velem), and on the Neckar. Eventually it occupied the whole Rhine basin, spreading as far as Holland.

*Con-  
nexion  
with  
mining*

The North Alpine urnfield culture has a similar distribution to the Early Bronze Age Aunjetitz and Straubing cultures. Its authors settled by preference in the fertile valleys and along trade routes. Often, however, they forced their way far into the mountains, e.g. round Salzburg and in the Tyrol, but such extensions of settlement are in every case obviously correlated with mining or with trade. Indeed, the most distinctive feature of the North Alpine urnfield culture is the evident anxiety of its authors to control important trade routes and deposits of copper and salt. It is the urnfield folk whose remains are found in greatest abundance round the copper mines of Salzburg<sup>9</sup> and Tyrol<sup>10</sup> and the salt deposits of Hallstatt,<sup>11</sup> Hallein in Salzburg,<sup>12</sup> Reichenhall<sup>13</sup> in Upper Bavaria, and Mergentheim in Wurtemberg.<sup>14</sup> The distribution of the cemeteries of the Knoviz group in Central Bohemia suggests a similar correla-

<sup>1</sup> Szombathy, *op. cit.*; Hoernes, *Urgeschichte*, p. 477, fig. 7.

<sup>2</sup> *Real.* v, p. 316, pl. 97 (settlement).

<sup>3</sup> *MAGW.* li, p. 42 (settlement).

<sup>4</sup> Theuer, p. 11, and pl. iv, 1.

<sup>5</sup> Mostly unpublished; cf. *Real.* v, p. 394.

<sup>6</sup> *BAUB.* xix (1915), p. 15; much unpublished material from Lower Bavaria is at Straubing and Landshut.

<sup>7</sup> Cf. *Real.* ii, p. 86; vii, p. 11; *JZK.* iv, p. 23; *MAGW.* xxi, pp. 4 f.; xxiv, pp. 61 f.; Schráníl, *Böhmen*, pp. 157-69.

<sup>8</sup> Heierli, *Urgesch.*, pp. 251 f.

<sup>9</sup> No urnfields have actually been found in this district, but the bronzes and ceramic remains are distinctive; Kyrle, *ÖKT.* xvii, esp. p. 49.

<sup>10</sup> *JfA.* vi (1912), p. 58 (Schwatz), perhaps also Hötting.

<sup>11</sup> The mines were first worked by the urnfield folk; the famous cemetery reveals their culture in a later stage only; Mahr, *Hallstatt*, p. 32.

<sup>12</sup> *ÖKT.* xvii, p. 69.

<sup>13</sup> *MAGW.* xxxiv, p. 60; Behrens, p. 222; *AuhV.* v, p. 394.

<sup>14</sup> Schumacher, *Rheinland*, i, p. 69.

tion with the exploitation of the tin lodes of the Erzgebirge (see Map IX).

Their demand for copper and salt, and consequent advance into the highlands, brought the urnfield folk into contact with the older population of the tumuli, described in Chapter XV, and this contact gave the urnfield culture of the Upper Danube-Rhine area a far more complicated character than that of the Oder-March basins. These complications necessitate a distinction of several sub-groups such as was unnecessary in dealing with the Lausitz cultures. We may recognize an Austro-Bavarian, a Knoviz-Milaveč, and a Franconian group. The common features of the whole series may, however, first be summarized.

*Contact  
with the  
barrow-  
builders*

The remains are derived from graves, settlements, mines, and hoards, but as usual the burials afford the most instructive data.

The burial rites of the North Alpine urnfields are far less uniform than in those east of the Elbe or in Hungary. As there, cremation was the general rule, the ashes being preserved in cinerary urns. In one or two cases,<sup>1</sup> though the grave contained an urn, the ashes lay outside it! The same peculiarity is later noticeable in the great cemetery of Hallstatt itself.<sup>2</sup> A 'Seelenloch' was very frequently provided for the escape of the ghost in the urns from barrows round Plzen,<sup>3</sup> and in the forest of Haguenau<sup>4</sup> the same peculiarity was observed.

*Burial  
rites  
Cremation*

Though flat graves predominate in urnfields there are a number of graves under barrows in Western Bohemia, Bavaria, and the Rhineland that must be assigned to the urnfield culture; in them, in contradistinction to the cremation interments of the tumulus culture proper, there was a regular grave-pit beneath the mound, and the ashes were contained in typical urns. Many of the urn burials under barrows (Ihringen,<sup>5</sup> Jagstfeld,<sup>6</sup> and the Haguenau group) belong to the later phase of the urnfield culture, but the barrow of Milaveč in Western Bohemia must rank as one of the earliest burials of our group.<sup>7</sup> Not a few cases are known in which cists of stone slabs or dry masonry were built to contain the ossuary, but such mostly belong to the later phase and may be secondary phenomena.<sup>8</sup>

*Barrows  
and flat  
graves*

<sup>1</sup> Grünwald I (*BAUB.* xix, p. 16);

Doubravka, east of Plzen.

<sup>2</sup> Mahr, *Hallstatt*, p. 20.

<sup>3</sup> *Sbor. Plzen*, vii, p. 14.

<sup>4</sup> Schaeffer, *Haguenau*, p. 223.

<sup>5</sup> *Bj.* 131 (1927), p. 167 (Baden).

<sup>6</sup> *Ibid.*, p. 188; *FbS.* xx, p. 14.

<sup>7</sup> So Kraft, *Bj.* 131, p. 166. Probably Kammerberg near Gunzenhausen belongs here too; *PBl.* 1889, p. 4.

<sup>8</sup> Kraft, *l.c.*, p. 189.

*Inhumations* Finally, certain inhumation burials must, on account of their furniture or of their position in the middle of urnfields, be assigned to the group under review despite the abnormal burial rite. The most significant of these exceptional inhumations are the contracted burials found in Knoviz settlements in Bohemia.<sup>1</sup> Again, at Gemeinlebarn in Lower Austria some inhumation graves, such as 55,<sup>2</sup> contain typical urnfield vases! There is a specialized group showing similar abnormalities in Oberpfalz and Franconia, and in the later phase there are several cases of interment in the extended position on the Middle Rhine<sup>3</sup> and on the Main.

*Urns* The distinctive urn, type 1, of the North Alpine group has a piriform (Milaveč) or globular (Hötting) body and a short cylindrical neck with a wide brim (Fig. 189). The body is sometimes fluted or roughened. Not seldom there is a plastic ridge or imitation rope, often duplicated, running round the shoulder, or four small nipples in the same position, or both ornaments combined. Otherwise the earlier urns are plain, save in the Tyrol, where specimens richly decorated with incised patterns, small warts, or false cord-impressions<sup>4</sup> are quite common.

*Pillar urns* In the Tyrol a special type (1a) was developed, in which the brim is supported by little pillar-like handles that are twisted or slashed (Fig. 190). This variant is termed a pillar urn,<sup>5</sup> and recurs in the domestic pottery of the Knoviz culture in Central Bohemia and perhaps once at Gemeinlebarn (Fig. 191).

*Lausitz ossuaries* Besides the typical urn with cylindrical neck, the biconical Lausitz ossuary is found sporadically in many early urnfields. There are many examples from the Plzen district, several in Lower Austria,<sup>6</sup> one from Apperndorf in Lower Bavaria,<sup>7</sup> one from Grünwald near Munich,<sup>8</sup> and one from Wilten near Innsbruck.<sup>9</sup>

In contradistinction to the Lausitz and Hungarian graves of the same type, the North Alpine urnfields include many tombs richly furnished with bronzes. We can thus form a clear picture of the armament and dress of the urnfield people.

<sup>1</sup> Schráníl, *Böhmen*, p. 169; *Real.* ii, p. 85; Pič, i, p. 126.

<sup>2</sup> Szombathy, *Flachgräber bei Gemeinlebarn*, pl. 12.

<sup>3</sup> e.g. Wollmesheim I in the Palatinate (*infra*, p. 361).

<sup>4</sup> Made by rolling a ribbed or closely twisted metal ring over the surface.

<sup>5</sup> *Real.* v, p. 394.

<sup>6</sup> Gemeinlebarn 15, 6, 9, 13, 53, &c. Gradl near Krems, *MAGW.* li, p. 42, fig. 13, &c.

<sup>7</sup> M. Landshut.

<sup>8</sup> *BAUB.* xix, fig. 2 (grave II).

<sup>9</sup> M. Innsbruck. This list is not exhaustive.

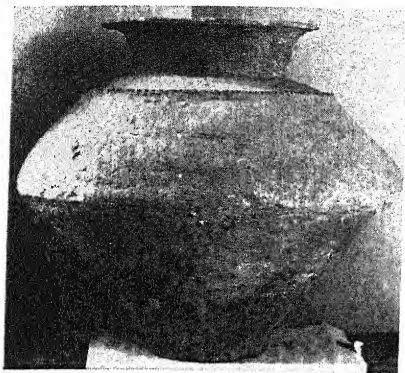


FIG. 189. Dolion from Mühlau,  
Grave 1. M. Innsbruck.  $\frac{1}{13}$



FIG. 190. Pillar urn, Mühlau,  
Grave 1. M. Innsbruck.  $\frac{1}{10}$

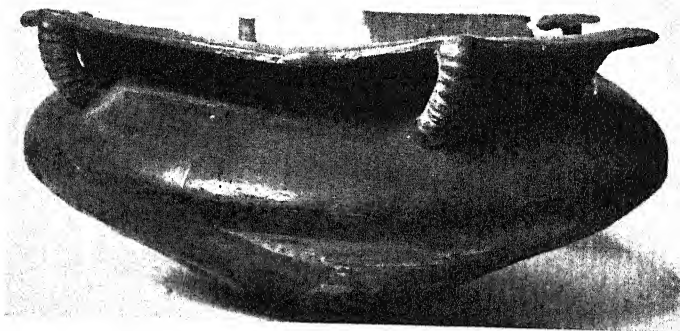


FIG. 191. Pillar urn from Praha-Bubenic. Narodni M.  $\frac{1}{5}$



FIG. 192. Large deep bowls, Eisenbichl, after MAGW.  $\frac{1}{4}$



The axe was not used as a weapon, and so no bronze celts are found in graves, but, as farther east, stone celts had been deposited in one or two tombs. From the numerous hoards and the finds in settlements we know that the favourite celts of the group belong to the winged class, generally with the wings well up towards the butt and often embellished with a cast loop to take the string that kept it fast to the haft (B5). Stone  
celts  
  
Winged  
celts

The typical weapon was the sword, generally a slashing variety. Early graves and hoards contain tanged swords of type C3 (Reutlingen), or bronze-hilted weapons like B4 (Milaveč)<sup>1</sup> or B3, but with more swelling grip (Kammerberg and Nöfing).<sup>2</sup> Later we have Hungarian swords like B5<sup>3</sup> and the ribless variants, occasional antennae and Ronzano types,<sup>4</sup> and the tanged sword of type C4.<sup>5</sup> It is noticeable that such weapons have not yet been found in Lower Austrian cemeteries of the early phase. Swords

Curious rapiers rather like A3<sup>6</sup> and others of type A4<sup>7</sup> occur, principally in the peripheral regions. Flat knife-daggers with narrow butt (B3), and socketed spear-heads of lanceolate form, and arrow-heads were also used.<sup>8</sup> Rapiers

Knives, as in the Lausitz, were often placed in the graves, but diverge substantially from the eastern forms. The favourite types were 9,<sup>9</sup> 12,<sup>10</sup> and above all 11,<sup>11</sup> together with more archaic forms like 4 (Mühlau, Gemeinlebarn) and a variant of 12 with curved back. Knives

Razors are at first less common. We have already mentioned the curious type A 1-3 that seems to be confined to the barrows of Western Bohemia, Franconia, and Oberpfalz. In grave 25 at Mühlau (Tyrol) the familiar penannular type already appears, to become exceedingly common in the later Bohemian<sup>12</sup> and South German urnfields and in the Swiss lake-dwellings. Razors

Sickles do not occur in graves, but the Italian form and, Sickles

<sup>1</sup> This seems the easternmost specimen of the type found in a grave.

<sup>2</sup> Theuer, *Oberösterreich*, pl. IV, 1.

<sup>3</sup> WPZ. xi, p. 122 = BRGK. xvi, p. 23; *Götze-Fest.*, p. 172; Kraft, *Bronzezeit*, pl. XI, 1.

<sup>4</sup> *Götze-Fest.*, p. 173.

<sup>5</sup> BRGK. vii, p. 179, fig. 89, 3 (Wollmesheim).

<sup>6</sup> Kraft, *Bj.* 131, p. 162.

<sup>7</sup> Behrens, no. 565, p. 230; Hock, *Frankenland*, 1914.

<sup>8</sup> Kraft, *op. cit.*, p. 165.

<sup>9</sup> Mühlau (Tyrol), Singen, Heidesheim (Rheinpfalz).

<sup>10</sup> Egg (Canton Zurich).

<sup>11</sup> Rovio (Canton Ticino, *BP.* i, pl. IV), Benningen (Basel, *Bj.*, l. c., pl. VIII, 1), St. Ilgen (nr. Heidelberg, *AuhV.* v, pl. 35, 640).

<sup>12</sup> Matrei, Mühlau, and other Tyrolese cemeteries, *Real.* v, pl. 129, h.

<sup>13</sup> Hostin, Stocky, *BAB.* xlv. 9.



more rarely, button sickles are abundantly represented in hoards, as in the Lausitz area.

The ornaments found in the urnfields vary so greatly from group to group that a detailed description of them must be postponed. Here it suffices to say that fibulae are only found sporadically, chiefly in the Austro-Bavarian group, and to draw attention to the comparative abundance of gold objects. Farther west round Plzen, in Bavaria, and the Tyrol the precious metal is represented principally by small helical wire rings generally of type 1a. But a gold disk ornamented with stamped concentric circles was found in a Tyrolese urnfield, and the grave at Binningen (Canton Basel) and the hoard of Paseka<sup>1</sup> in Western Bohemia contained large oval sheets of gold leaf, likewise ornamented with stamped circles, here supplemented by tangents, zigzags, and triangles in relief (Fig. 193). Perhaps these were originally intended as platings on knife sheathes.<sup>2</sup>

*Amber* Amber<sup>3</sup> and glass beads are also sometimes found.

*Bronze vases* Further evidence of the wealth of the urnfield folk is afforded by the bronze vases. Smooth shallow cups with ribbon handles riveted on were found in the Tyrolese cemeteries, at Grünwald, and in Western Bohemia, all in the earliest phase.<sup>4</sup> The most striking vessel of the early group, however, is the famous wheeled bowl from Milaveč.<sup>5</sup> It approximates in form to the usual cinerary urn, but stands on a framework to which four wheels (four-spoked) are attached. Parallels are known from North Germany and Denmark, but the whole group has very plausibly been connected with Hittite and Phoenician cult objects.<sup>6</sup>

Though both types of bronze vessel are usually designated Italian, no really exact parallels are known in the Peninsula. Even the large buckets, ornamented with birds' protomae, that appear just a little later,<sup>7</sup> have more numerous parallels in North-Eastern Hungary than in Italy, though the ornament was very popular in the latter country in Benacci I times. And in Bavaria such buckets are associated with gold vases far more likely to have come from Hungary than Italy.

*Bits* Though it is clear that wheeled vehicles were known, horse

<sup>1</sup> Kraft, *Bj.* 131, pl. VIII; *Real.* ii, pl. 35.

<sup>2</sup> *AsA.* xvii (1915), pp. 115 f.

<sup>3</sup> e.g. Gemeinlebarn, grave 81, Szombathy, p. 59, perhaps older.

<sup>4</sup> Kraft gives a list of the finds in *Mannus Ergänzbd.* v, p. 45, n. 1. Cf.

*AuhV.* v, p. 213, written before the excavation of the Grünwald cemetery.

<sup>5</sup> Stocký, *BAB.* lii; *AuhV.* v, p. 207.

<sup>6</sup> Kraft, *Bj.* 131, l. c.

<sup>7</sup> Unterglauheim, Behrens, fig. 9, p. 27. Cf. p. 375.

trappings do not yet appear in the graves. The employment of the horse is, however, attested by the horn cheek-pieces from bits found in several settlements.<sup>1</sup>

Settlements of the early urnfield folk are less well known. The sites (e.g. round Innsbruck) seem generally to have been chosen with a view to defence. If fortification is not demonstrated with certainty for the earliest phase, there is no doubt that the early South German 'ring walls' of the next period were built by the urnfield folk.<sup>2</sup>

The type of habitation is likewise uncertain. Rectangular log cabins have been identified at Mergentheim, Buchau on the

*Settle-  
ments*

*Log huts*

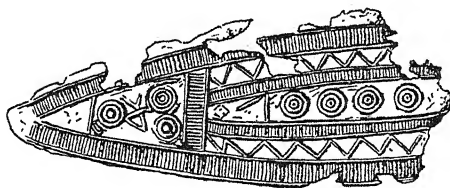


FIG. 193. Gold-leaf plating from Paseka

Federsee, and Hallwil in Switzerland (Aargau).<sup>3</sup> On the other hand, at Burgweinting near Regensburg<sup>4</sup> we hear of 'Wohngrüben' as usual. Those round Knovíz in Bohemia have been described in detail, but their interpretation as refuse pits or silos still seems possible.

The mines and industrial settlements deserve a section to themselves. The hoards connected with their exploitation have the same character as the contemporary depots described in Chapter XVI. They seem to have been left by travelling tinkers, engaged in the collection of old scrap bronze for re-smelting, and include many worn implements as well as formless lumps of bronze.

*Hoards*

## II. THE COPPER AND SALT MINES

We have connected the prehistoric copper mines of the Tyrol and Salzburg and the salt mines of the Salzkammergut with the urnfield people. Their cemeteries spread in a significant manner all along the *Grauwack* zone of the Eastern Alps,<sup>5</sup> and

<sup>1</sup> *AuhV.* v, p. 396, fig. 2, h; Schumacher, *Rheinlande*, p. 69.

<sup>2</sup> Kraft, *Bj.* 131, p. 189.

<sup>3</sup> Schumacher, *Rheinlande*, i, p. 69; Reinert, *Wohnbau*; perhaps also

Eisenbichl near Reichenhall, *MAGW* xxxiv, p. 60.

<sup>4</sup> *Verh. OP.* lxviii, p. 37.

<sup>5</sup> *BRGK.* xvi, p. 22.

the exploitation of the mines in the urnfield period is admitted by all authorities.

*The mines* Mining<sup>1</sup> was carried out by means of open workings and also by regular shafts and underground galleries when the surface lodes had been exhausted. The shafts were generally slanting, and sometimes a second or even a third shaft was cut to improve the draught. Where the softness of the stone required it, the walls of the shafts and galleries were strengthened with props. Generally it was found sufficient to fix stout piles spanning the gap between floor and roof or between the walls by means of a wedge, but in very soft stone the walls of the galleries were supported by planks behind the props.<sup>2</sup>

*Methods of mining* In driving the shafts the rock was first split by kindling a fire against it and then throwing water on the hot surface. The miner's chief implement was a sort of short bronze crow-bar socketed to take a wooden shaft. Many knee-axe shafts, designed to fit bronze celts with the wings at, or generally above, the middle of the body, have been found at Hallstatt and at Dürnberg near Hallein. These axes would have been used for cutting the timbers.

*Grooved hammer-stones* In the copper mines the ore was roughly broken up and washed before transportation to the surface. Grooved hammer-stones (cf. Fig. 130) were used for breaking up the ore, and the refined product was then carried to the surface in wooden troughs or leather sacks. The ascent was facilitated by a ladder made from a tree-trunk with notches cut in it to serve as steps.

*Smelting* The copper ore was smelted close to the shaft, but the ovens were always near streamlets. The furnaces were apparently built into the side of the mountain, and probably stood about a metre high. There was a depression on the floor of the oven where the molten metal might accumulate. It is questionable whether any special channel was provided to allow the slag to run off; perhaps the oven wall was opened up periodically, and the slag raked out. The Mitterberg ore contains such a high sulphur percentage that it easily burns by itself.<sup>3</sup> All that would be needed would be to light a fire on the oven's hearth and then fill up the furnace with alternate layers of ore and charcoal.

*Age of the mines* As noted in Chapter VII, Much believed that the exploitation of the Tyrolese copper ores began in our Period III. The

<sup>1</sup> This account is based on Andree, *Bergbau in der Vorzeit*.

<sup>2</sup> Andree, p. 34.

<sup>3</sup> Klose in *ÖKT.* xvii, p. 32.

Late Bronze Age mining industry just described would, on this view, be the ultimate development of the old surface workings. Kyrle, as we saw, was inclined to reject the Copper Age exploitation altogether. As to the regular mining, his conclusions are very definite. The copper mines were all in operation simultaneously; the objects found in them are everywhere the same; the methods of working show no trace of development. 'The technique of mining', he concludes, 'was not autochthonous; it was introduced by experienced miners after the discovery of the ores.'<sup>1</sup> It would be natural to identify the initiators of the new industry with the urnfield folk.

The remains from the mines do not settle the question, but if the bronzes found stray or in settlements in the mining region be examined they certainly support the view just quoted. Apart from a couple of hoards, obviously connected with the amber trade across the Brenner, Early Bronze Age types are conspicuously lacking. On the other hand, Late Bronze Age types (swords, vase-head pins, ribbed and twisted bracelets), characteristic of the urnfield culture, are very common.

They do not, however, clinch the issue. Hell of Salzburg has recently revived—in a modified form—Much's theories in a series of important articles based upon a study of the pottery from settlements some of which indubitably are connected with the mining industry. The settlements are for the most part hill stations, and all yielded chalcolithic remains of the Altheim culture.

From the Rainberg near Salzburg,<sup>2</sup> perhaps also from the Klinglberg<sup>3</sup> (near the Mitterberg mines), and the Grillberg (near Elsbethen),<sup>4</sup> come sherds resembling the pottery of the Middle Bronze Age barrows in Bavaria and Oberpfalz. Similar wares occur at Reichenhall just across the Bavarian border accompanied by bronzes characteristic of the older Bavarian tumuli.<sup>5</sup> Finally, some sherds from Götschenberg near Bischofshofen<sup>6</sup> and elsewhere—especially fragments of jugs with a shoulder-groove as in the Eastern Aunjetitz group—might really be Early Bronze Age. Metal forms belonging to that period are represented by a flanged celt of type A1 from Hellbrunner hill near Salzburg,<sup>7</sup> and a pin of type B2 from

<sup>1</sup> ÖKT. xvii, p. 49.

<sup>2</sup> ÖKT. xvii, fig. 24, 1.

<sup>3</sup> MAGW. li, p. 202.

<sup>4</sup> MAGW. xlviii (1919), p. 215

<sup>5</sup> MAGW. xxxiv (1904), pl. III, 21; Reinecke, *AuhV.* v, pp. 393 f.

<sup>6</sup> WPZ. xiv (1927), pp. 12–22.

<sup>7</sup> MAGW. li (1921), p. 34.

Rainberg.<sup>1</sup> Hence Hell concludes that the arrival of skilled miners in the Austrian Alps should be dated back to our Period IV.

*Late Bronze Age types dominant* The bulk of the remains from the settlements would, however, seem to belong to the Late Bronze Age. Among the abundant coarse sherds appear fragments of an urn-like pithos with concave neck.<sup>2</sup> The neck is generally smooth, the body roughened and separated from the neck by a plastic ridge set off with finger-tip impression. This form of pithos occurs in the Late Bronze Age barrow of Riegsee 23 in Upper Bavaria<sup>3</sup> and in the settlements round Reichenhall<sup>4</sup> (Fig. 192 a), and then in many contemporary settlements in Lower Austria<sup>5</sup> and Bohemia.<sup>6</sup> It is no doubt related to pithoi of the Aunjeitz period,<sup>7</sup> but is equally akin to the ossuary from our urnfields.<sup>8</sup> A wider form, associated with the foregoing at Eisenbichl near Reichenhall (Fig. 192 b), is actually found in early settlements of that type.<sup>9</sup> The definite association of this type of vase with the mining settlements gives therefore no conclusive evidence as to the origin of the miners. They might have brought it with them from Hungary in the Early Bronze Age or from somewhere else in the Late Bronze Age. The fact remains that the urnfield folk did eventually settle round the mines. Prior to their advent there is no evidence for intensive settlement, still less for any wealth of local or imported bronzes in the Eastern Alps. If the ores had been early exploited we should reasonably expect to find in such a well-studied area a mass of imported luxury articles of older type than actually do meet our eyes in the urnfield period. The evidence therefore favours Kyrle's view.

### III. THE SEPARATE GROUPS

#### (a) *The Austro-Bavarian Group.*

The urnfields of the Upper Danube basin from Lower Austria to Switzerland constitute a very consistent group, distinguished by the bronzes and accessory vases from the Bohemian and Franconian series.

<sup>1</sup> ÖKT., l. c., fig. 11. Of course, as we saw, this pin lasted in Hungary into the urnfield period.

<sup>2</sup> WPZ. xiv, p. 12, fig. 2, 6.

<sup>3</sup> Naue, OB., pl. xxxix, 2.

<sup>4</sup> MAGW. xxxiv, pl. 1, 5-6.

<sup>5</sup> Herzogenberg, Real. v, pl. 97 d; Haslerberg, JZK. i, p. 20, &c.

<sup>6</sup> Information from Dr. A. Mahr.

<sup>7</sup> e.g. the big vase from Helmsdorf, p. 232; in the last resort the jar from Ószentiván represents the prototype.

<sup>8</sup> Kraft seems to take it as an 'intermediate' form, Bf. 131, p. 168.

<sup>9</sup> MAGW. xxxiv, pl. II, 7-8; Kraft, Bf. 131, pl. VI, 2 (left).

The accessory vases comprise a considerable variety of types. Dishes were not often used to cover the urns and so are not prominent. The commonest form has a collar and broad rim.<sup>1</sup> Cups appear in three varieties: (2) a shallow form in which the handle falls from the rim to the shoulder as in Lausitz<sup>2</sup> (Fig. 194a), (3) a variant in which the handle begins mid-way up the neck; more rarely (4) the handle sits on the shoulder. Small pots (5), not unlike the urn in shape, appear in several urnfields, especially in Baden and Switzerland.<sup>3</sup> The jug (6) (Fig. 196) resembles the cup (2), save that the neck is taller. Among interesting variants may be noted small urns of Villanova shape (Fig. 195) from the Tyrol cemeteries and 'feeding cups' from Grünwald and Lower Austria.

*Accessory  
vases:  
forms*

The small vases are generally very fine and often blackened with graphite. Forms 2-5 are frequently ornamented with incised patterns—zigzags, triangles, inverted wolf's teeth—in a broad belt framed by horizontal incisions and running round the shoulder. The field may be broken up by four small conical warts.<sup>4</sup> Other vases, and especially the miniature Villanova urns, often show vertical or oblique flutings chiefly on the shoulder.<sup>5</sup> Wart decoration is not uncommon.<sup>6</sup>

*Graphite  
and  
fluted  
ornament*

Besides vases, the people of this group were apparently making the so-called 'moon-figures' out of clay even in this phase (cf. Fig. 152). The early examples come from settlements along the Danube,<sup>7</sup> but later they spread all over Switzerland and down the Rhine. They seemed to have served as fire-dogs, but are none the less certainly related in the last resort to the Cretan Horns of Consecration<sup>8</sup> and the system of religious conceptions embodied in the steer cult.<sup>9</sup> The hearth was sacred, and these cult symbols mark its sanctity.

*Fire-dogs*

Next to the pottery the bronze ornaments best define our group, since the arms belong to the types already enumerated. The massive bracelets are twisted or heavily ribbed as E2, E3, and F3.

<sup>1</sup> Oberendingen, Schifferstadt, Reutlingen.

<sup>2</sup> Hötting, Forst, Velem.

<sup>3</sup> Kraft, *Bj.*, pl. VII, 2 and IX, 3, c.

<sup>4</sup> Kraft, *Bj.* 131, pp. 172-3.

<sup>5</sup> *Ibid.*, p. 176; for Tyrol cf. fig. 194.

<sup>6</sup> e.g. Hoernes, *Urgeschichte*, p. 417, fig. 2 (Hötting).

<sup>7</sup> Burgweinting, *Verh. OP.* lxviii, p. 37.

<sup>8</sup> Cf. Tschumi, *Schweiz*, pp. 90, 183.

<sup>9</sup> It would perhaps have been transmitted up the Danube, since there are examples of rather doubtful antiquity from Bulgaria and Hungary (p. 283 above).

*Pins* No less distinctive are the pins with vase,<sup>1</sup> turban,<sup>2</sup> poppy,<sup>3</sup> or bulb heads<sup>4</sup> (D11, D9, D10, and D8).

*Fibulae* Fibulae appear only as accidents: the Peschiera form with twisted bow in several graves round Innsbruck, A3 a at Grünwald<sup>5</sup> five times, and A"2 a at Egg (Canton Zurich). Later, a couple of two-member fibulae reached our area: B3 at Gemeinlebarn in Lower Austria, Taimering near Regensburg,<sup>6</sup> and at several sites farther north on the Rhine and Main and B4 at Burladingen in Hohenzollern, Aub on the Main,<sup>7</sup> and at Wollmesheim in the Palatinate (here with a skeleton!).

*Finger rings* Small spiral rings of gold with twisted ends (1) are not unknown, and later type 4 of bronze came into use.

*Girdle clasps* The girdle was fastened with the very distinctive clasp type 3.<sup>8</sup> The leather was studded with hollow buttons that now have loops on the inside, and perhaps wheel-pendants were hung from it. In the Grünwald and the Tyrolese urnfields the disk-pendants were already surmounted with heraldic birds' heads, a motive that has been rightly connected with the Egyptian winged disk probably in its later Hittite-Assyrian form.

*The Hallstatt bird*

*Chains* Chains of closed rings united by band-shaped links are also found in graves of the group (cf. Fig. 203).

### (b) *The Knovíz Group.*

In Central Bohemia, besides the regular cremation burials, we meet human remains in bell-shaped pits mixed with animal bones and other kitchen refuse.<sup>9</sup> Matiegka many years ago pointed out that the human bones, generally quite fragmentary, had been scorched by fire, split to extract the marrow, and hacked about with knives; they could then only be the remains of cannibal feasts.<sup>10</sup> Matiegka's inference has been confirmed by further observations in Bohemia, and the gruesome custom

*Cannibalism*

<sup>1</sup> Velem Szt. Vid, Paudorf, Hötting, Grünwald (near Munich), Hallstatt, Salzburg (ÖKT. xvii, Beitr. III, fig. 10).

<sup>2</sup> Milaveč.

<sup>3</sup> Mels (Canton St. Gall), Egg (Zurich), Marstetten (Wurtemberg). Cf. Kraft, *Bj.*, pp. 131, 162. *AsA.* xxix, pp. 76, 139, 212, who makes a special group originating in North Italy out of graves with these pins and those with swords like A3. Cf. p. 358 below.

<sup>4</sup> In the early specimens the heads are relatively small and the neck is em-

bellished with several ribs; in later specimens the head is globular and there are less than five ribs, Kraft, *Bj.* 131, p. 165.

<sup>5</sup> *Götze-Festschr.*, p. 173.

<sup>6</sup> Hock, *Frankenland*, 1914, pl. 1, 10.

<sup>7</sup> *Ibid.*

<sup>8</sup> Rovio (Canton Ticino), Mühlau, Grünwald, Arndorf (Lower Bavaria): later Jagstfeld (on Neckar), &c.

<sup>9</sup> In one pit portions of four skeletons, not one complete, were identified.

<sup>10</sup> *MAGW.* xxvi, p. 129; Schráníl, p. 172.



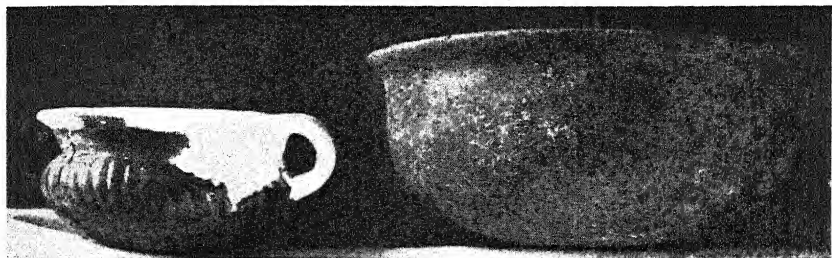


FIG. 194. Cup and dish, Wilten. M. Innsbruck

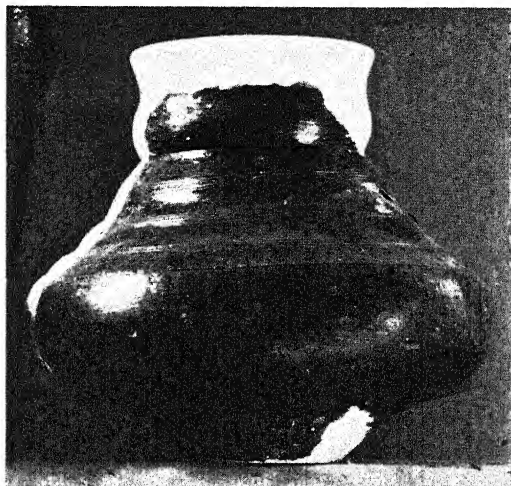


FIG. 195. Miniature urn, Völs. M. Innsbruck



FIG. 196. Jugs, Mühlau. M. Innsbruck



has been also detected in Austria.<sup>1</sup> The pottery and bronzes from Knovíz deposits approximate so closely to those from late Milaveč barrows in Western Bohemia that the two groups may here be treated as one.<sup>2</sup>

Besides the urn with cylindrical neck, the biconical Lausitz ossuary (I) is common in Bohemia but generally in a rounded variant. The second Lausitz urn-form also occurs, usually with a very long neck. In the later phase, E, it grows into the 'storeyed urn' (Etagenurne) with a bulging neck. The type is commonest round Plzen,<sup>3</sup> but also occurs on the Elbe, both in Bohemia<sup>4</sup> and in Saxony,<sup>5</sup> and sporadically even in Oberpfalz<sup>6</sup> and Franconia.<sup>7</sup>

Other forms reminiscent of Lausitz B are fluted cups (like Fig. 197a) and dishes with fluted rims (like Fig. 182a). The Lausitz amphora is represented by a few stray examples with degenerate warts.<sup>8</sup> The pillar urns (Fig. 191) and the wide bowls (Fig. 197c) have closer parallels farther west.

The smaller vessels, including the storeyed urns, are always smooth and not infrequently graphited in the later phases. The big urns, on the other hand, are generally rough. Decoration when present is restricted to fluting or light grooving. Warts are rarely used, but a deep groove running round the base of the neck of some late urns is taken over from the older tumulus vases.

The weapons of the Knovíz culture correspond to those used farther west with the addition of a few Hungarian mace-heads,<sup>9</sup> like Plate 15, 3, imported from the south. But from Plzen comes a remarkable bronze shield<sup>10</sup>—the earliest dated bronze shield from Central Europe (Plate 15). The type might be regarded as a native development of the round wood or leather shield of the tumulus culture, but has very close parallels on the ninth-century Assyrian sculptures, to say nothing of analogues from Great Britain and Scandinavia.

<sup>1</sup> *MAGW.* liii, p. 83.

<sup>2</sup> Fuller details distinguishing the several groups are given by Schráníl, *Böhmen*, pp. 160–8 and 182 ff.

<sup>3</sup> *Sb. Plzen*, vii, p. 15 (fig. 5).

<sup>4</sup> Vepřek, Pětipsy (near Kadaň), Pič, i, fig. 54; Schráníl, pl. xxix.

<sup>5</sup> Abercromby, ii, p. 45; *ZfE.* viii (1876), p. 95.

<sup>6</sup> *AuhV.* v, p. 244.

<sup>7</sup> Hock, *Frankenland*, 1914, p. 254 (Gundelsheim near Bamberg).

<sup>8</sup> e.g. barrow 89 at Háj.

<sup>9</sup> Řepeč 12; *PA.* xviii, pl. II, 6 = Pič, ii, pl. XII, 6; Schráníl, *Böhmen*, pl. xxxiii, 35 and p. 162.

<sup>10</sup> *Sborník Plzen*, ii (1911), pp. 96 ff. Being found in a unitary hoard it enables us to date other specimens as, e.g., Behrens, fig. 48, from Rhine near Mainz. The Plzen shield was found in a Knovíz-Lausitz pot with a fragmentary sword blade (? C<sub>3</sub>), Italian and button sickles, a pin-head like B10, and a spiked tutulus with very low spike. It is assigned to phase E.

*Lausitz forms*

*Storeyed urns*

*Pillar urns*

*Graphiting*

*Shields*

*Bracelets* The ornaments, on the other hand, divergesubstantially from those current in Bavaria. Massive bracelets are found only in hoards;<sup>1</sup> light wire or ribbon types alone are found in Knovíz graves. So, too, the pins ABo, B10, E8, and D1 agree more closely with the Lausitz than the Austro-Bavarian series.

*Pins*

*Fibulae* Fibulae are found almost exclusively in hoards, and all in phase E. The commonest are the giant variants of B3. In the hoard of Jenšovice<sup>2</sup> the several stages of manufacture may be seen—quadrangular bronze bar, bar hammered out flat in the middle, oval plate terminating in wires not yet coiled, and the article complete but for pin. Later still, spectacle fibulae, built on the plan of the Nordic series with a separate, pivoted pin, are found in the barrows round Plzen.

Still a number of western types occur such as armlets or anklets like Fig. 170, 2, finger rings, like type 2 save that the wire of the spiral disks is twisted, compound neck-rings like Pl. 8, G2, razors of types 1-2, knives like type 9, &c. Armlets like narrow versions of B1, on the other hand, are a link with the eastern group.

### (c) *Franconian Group.*

A small but highly specialized group of cemeteries in the basin of the Upper Main and Piegwitz must be mentioned here for the sake of completeness. They are not urnfields, but are more closely related to the local Tumulus cultures.

Several methods of disposing of the corpse were in use concurrently. Besides inhumation in the extended position there are cases of secondary burial<sup>3</sup> (interment after the flesh has decayed away from the bones), possible instances of roasting of the remains, the bronzes also showing traces of the action of fire<sup>4</sup> and cremations with or without inurnment of the ashes.<sup>5</sup> The bones or cinerary urn lay either on a circular bedding of small stones or in a pit or cist which was often surrounded by a similar stone bedding.<sup>6</sup> Sometimes a real barrow surmounted the grave, but this was not always present, and in some cases, even when a barrow was observed, it may have grown up as a result of successive secondary interments as Wunder suggested.<sup>7</sup>

*Secondary burial*

*Cremation*

*Circle graves*

*Mixture of types* The grave goods display an interesting mixture of types

<sup>1</sup> Paseka, *Real.* ii, pl. 36.

<sup>2</sup> Stocký, *BAB.* xlix.

<sup>3</sup> *Abh. Nürn.* xxi, pp. 260, 275, 291.

<sup>4</sup> *Ibid.*, p. 263.

<sup>5</sup> e.g. *ibid.*, xv, p. 376; xxi, p. 287.

<sup>6</sup> *Ibid.*, p. 268; cf. *Frankenland*, 1914,

p. 254.

<sup>7</sup> *Abh. Nürn.* xv, p. 44.

derived from the Hercynian tumulus cultures and the eastern and western groups of urnfields. Typologically they denote two distinct periods, the first of which is the immediate continuation of the Middle Bronze Age tumulus culture.

Apart from socketed arrow-heads, weapons are rare. On the other hand knives and razors are very abundant. The typologically early forms of knife (2, 5, and 6) are so common here that Kraft seems inclined to regard Franconia as their original home. So, too, the primitive looking razors<sup>1</sup> are so plentiful that they might have been differentiated in this area though their ultimate home was Italy.

Knives

Razors

In Reinecke's Hallstatt A phase regular knives of Swiss (13 and 14)<sup>2</sup> and Upper Rhenish (10)<sup>3</sup> types were introduced apparently up the Main. From the same quarter came penannular razors,<sup>4</sup> 'pendants' of the same shape (as in the Lake-dwellings),<sup>5</sup> and the curious transverse celt B5a (Mühlanger) of Swiss type.

Among the ornaments twisted bracelets like AB1 and F3, disks with a loop on the back, pins like D1 may be due to eastern connexions, while anklets<sup>6</sup> are Rhenish and the vase-headed pin from a late grave at Grundelsheim<sup>7</sup> and perhaps the commoner early pin D6 are Bavarian. A remarkable necklace of amber and blue glass beads from Henfenfeld illustrates connexions with the north and south.

Anklets

Amber  
Glass

The commonest ceramic form is a big urnlike vase with trumpet mouth (Fig. 198, a).<sup>8</sup> Later specimens<sup>9</sup> are taller and more piriform. Such urns have analogues and perhaps prototypes in the Late Bronze Age barrows and urnfields of Upper Bavaria where pin D6 also occurs,<sup>10</sup> but might nevertheless be grouped with the North Alpine class. Parallels to the later form can be cited from inhumation graves in Thuringia.<sup>11</sup> But with this urn appear degenerate amphorae of the Hercynian tumulus type (Fig. 198, b, d),<sup>12</sup> and what might pass for very rounded descendants of the Lausitz ossuary (Fig.

Urns

Lausitz  
types

<sup>1</sup> *Ibid.* xxi, pl. LXX (Henfenfeld); Behrens, p. 231, no. 268 (Gädheim near Schweinfurth).

<sup>2</sup> Mühlanger, *Abh. Nürn.* xv, pl. VIII.

<sup>3</sup> *Frankenland*, 1914, pl. I, 8 (Gündelsheim).

<sup>4</sup> *Ibid.*, pl. I, 29 (Fuchstadt).

<sup>5</sup> Mühlanger, Lampertshofen (*ZfE.* xxxv, *NA.* p. 40).

<sup>6</sup> Probably like Fig. 170, 2. *Abh. Nürn.* xxi, p. 288; Behrens, p. 230, no. 565

<sup>7</sup> *Frankenland*, 1914, pl. I, 16.

<sup>8</sup> Dixenhausen and Henfenfeld (*Abh. Nürn.* xxi), perhaps Kammerberg near Gunzenhausen, *PBI.* 1889, pl. I, 7.

<sup>9</sup> Mühlanger, Lampertshofen.

<sup>10</sup> *PBI.* 1895, pl. III, 5; 1907, pl. I, 8-9.

<sup>11</sup> *JST.* x, p. 86 and pl. XIII, 8.

<sup>12</sup> Note the position of the handles; through failure to observe this Hör-

198, c). In the Main valley Lausitz forms certainly occur. For instance, at Reindorf near Lichtenfels,<sup>1</sup> an amphora, a cup, and a pot of the Lausitz B types, designated 4, 6, and 7 on p. 322, were found in a cemetery of inhumation and cremation graves belonging perhaps to Reinecke's Bronze Age D. Farther down stream at Fuchstadt a Lausitz amphora adorned with four groups of concentric circles<sup>2</sup> was found in a cremation grave under a barrow belonging to Reinecke's Hallstatt A. The closest parallels to this vase come not from the Lausitz but from Western Bohemia,<sup>3</sup> whence the two storeyed urns, mentioned on p. 345, must have been imported about the same time.

Hence in Franconia we seem to have a survival of the Hercynian tumulus culture, crossed with an early northward push from the North Alpine urnfield culture and overlaid by a current from North-Western Bohemia.

#### IV. CONCLUSION

*Economics* The group of urnfield cultures best illustrated in the Austro-Bavarian cemeteries belong to a race of farmers who were not only successful cultivators but also possessed herds and horses. They were further engaged in trade and industry.

*Sociology* They are marked out as a sedentary folk by their substantial villages and extensive cemeteries. The fortifications imply a close social organization, the great wealth of some graves suggests submission to princes or chiefs. War and fighting were common events in their lives. The whole impression of the period—the numerous hoards, the care lavished on weapons and defence indicate an age of struggle and unrest.<sup>4</sup>

*Origin* It is generally held that the appearance of the urnfields denotes the advent of a new ethnic element in the Upper Danube basin. Every one agrees that the urnfield folk with their primarily agricultural and industrial economy, their closely knit communities and their peculiar burial rites, cannot be identified with the people of the tumuli. These actually lived in the highlands while the urnfield folk occupied the valleys, and naturally an interchange of cultural elements took place between the two groups. We have noted already that many of the bronze and ceramic types found in the urnfields also

*Relations to Tumulus culture*

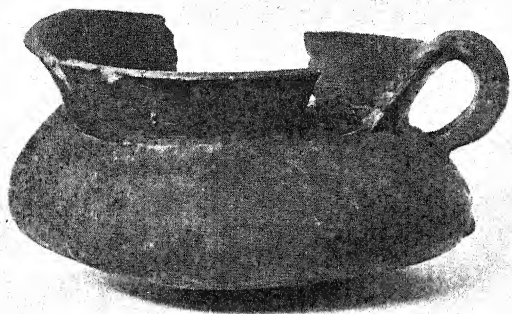
mann has connected the vase with the Lausitz series.

<sup>1</sup> M. Würzburg.

<sup>2</sup> Behrens, fig. 40.

<sup>3</sup> Barrow 98, at Háj, M. Plzen, no. 528.

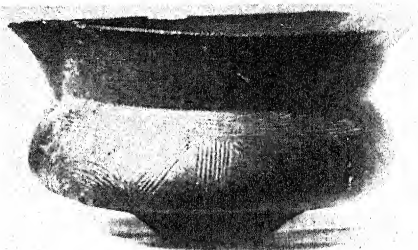
<sup>4</sup> Cf. Reinecke, *AuhV.* v, p. 397.



*a*



*b*



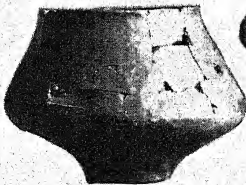
*c*

FIG. 197. Knovíz cups and dishes, Bubenec. Narodni Museum.  
*a* and *b*  $\frac{1}{5}$ , *c*  $\frac{1}{4}$

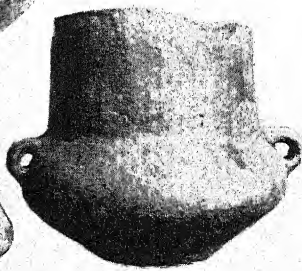
*a*



*b*



*c*



*d*

FIG. 198. Urns and amphorae, Henfenfeld. M. Nürnberg





occur in the contemporary barrows of Upper Bavaria. The bronze-hilted swords derived from type B3, perhaps also the taste for heavily ribbed pins and bracelets, would have been borrowed from the Bavarian tumulus-builders. On the other hand, the fine pottery from the later barrows is far more likely to have been the work of the sedentary peasants than of the pastoral hill folk whose metalwork was always superior to their pottery. The relations between the Knovíz folk of Central Bohemia and the Milaveč people of the west, who had advanced as far east as Prague (Velká Dobruška), would be of the same order. The contact between the two groups in either case can hardly have been always peaceful, and probably it is their opposition which gives the peculiarly martial character to the North Alpine urnfield cultures. At the same time, while a section of the tumulus folk kept apart, another section, both in Bohemia and Bavaria, may well have been absorbed in or have dominated the urnfield folk and come to constitute an integral and distinctive part of the new communities.<sup>1</sup>

It remains possible that the urnfield folk were (I) descendants of the local Aunjetitz-Straubing population of the lowlands, or (II) invaders (*a*) from the Lausitz area or (*b*) from the south-east, or were (III) constituted from a combination of all these elements. Their culture certainly shows points of agreement with each of the three groups enumerated.

(I) The urnfields occupy very much the same area as the Early Bronze Age cemeteries, and in some cases (Kelheim, Straubing, Kornwestheim, Gemeinlebarn) the same site was occupied in both periods. At the last-named site a definite continuity between the inhumation and cremation graves has been asserted by Hoernes,<sup>2</sup> and a curious blending of Lausitz, North Hungarian (Egyek), and North Alpine types is noticeable. Moreover, the urnfield cultures are the economic heirs of the Aunjetitz, as farther east. Nor is the contrast in burial rites complete. We have contracted skeletons at Gemeinlebarn. Conversely, a cremation burial with pottery of the Straubing type is reported from Kelheim.<sup>3</sup>

*Relations  
to  
Aunjetitz  
cultures*

The distinctive urn with cylindrical neck is regarded by most authorities as derived in the last resort from Aunjetitz forms.<sup>4</sup> The intermediate types have, however, not yet been traced either in Bohemia or Lower Bavaria, but might well be

<sup>1</sup> Cf. Červinka's remarks on the Knovíz culture, *Real.* vii, p. 11.

<sup>2</sup> *JZK.* i, p. 43; it is denied by Szom-

bathy.

<sup>3</sup> p. 235 above.

<sup>4</sup> Kraft, *BJ.* 131, pp. 168 f.

sought in Lower Austria or Slovakia. In the same way the jugs of the Austro-Bavarian group may be connected with Straubing forms, but come nearer Moravian and Lower Austrian Aunjetitz shapes. The fine black ware of Bavaria is likewise reminiscent of the Eastern Aunjetitz fabrics. A survival of the Aunjetitz population might then be admitted both in Bohemia and Lower Bavaria, but to explain the change a new element would have to be postulated.

*Theory of a Lausitz incursion* The theory of an incursion of Lausitz people has found more supporters. The Czech school<sup>1</sup> explain the Knovíz culture as a westward extension of the Lausitz culture, crossed with Aunjetitz survivors. Cervinka<sup>2</sup> rightly insists on the contribution made by outposts of the West Bohemian tumulus culture. An extension of the same wave from the Lausitz to Bavaria has been favoured by many German authorities.<sup>3</sup>

*Agreements between two groups* The agreements between the two cultures are certainly striking. In addition to a general community of economic life (agriculture, industry, trade) and social structure (regular village-communities) we have a perfect agreement in funeral rites—cremation, inurnment of the ashes, burial in urnfields. This agreement extends to details. The typical Lausitz ossuary is found in Western Bohemia, Lower Austria, the Tyrol, Bavaria, and even the Rhineland. In two or three cases even a 'Seelenloch' was provided (in urns of native type). The domestic architecture (log-cabin building) and control of the horse again serve to connect the western province to the eastern.

In the Knovíz area quite a number of accessory vases and even the bronzes (especially the pins) belong to Lausitz types; farther west only the cups look at all Lusatian, the ornaments are essentially different.

*Contrasts* Despite the many significant points of agreement, the North Alpine and Lausitz urnfields are separated by contrasts that are scarcely less important. The Lausitz graves are always very poor in bronzes; the North Alpine sometimes quite rich; the Lausitz culture looks peaceful and democratic; the North Alpine definitely martial and aristocratic; the Lausitz settlements were never fortified; the sites in Bavaria and Tyrol were chosen definitely with a view to defence. Perhaps these divergences might be explained by the circumstances of the Lausitz invaders in a country occupied by the warlike barrow-builders.

<sup>1</sup> Buchtela, *JZK.* iv, p. 32; Schráníl,

<sup>2</sup> *Real.* vii, p. 11.

*Böhmen*, p. 148; Stocký, *BAB.*, p. 23.

<sup>3</sup> *Mannus, Ergänzb.* v, p. 52, n. 2.

That will explain some of the differences in industry, too. Others seem more deep seated. The Lausitz people used a socketed celt; in the urnfield area west of the Elbe this type is rare; the regular axe belongs to the family of winged celts. The typical ossuary is almost foreign to the Lausitz culture.<sup>1</sup>

The contrast is accentuated by the existence of a vague frontier along the Elbe in Bohemia: on the east lie the extensive cemeteries of poor graves with a pure Lausitz inventory, on the west the burials in urns with cylindrical necks and rich hoards containing Austro-Bavarian types (Paseka). A mass expansion of the Lausitz culture to Bavaria, such as we can trace in Moravia, is inconceivable. None the less a real incursion of Lausitz people seems required to explain the wide distribution of the typical ossuary. The only question is the extent and importance of this element as a constitutive factor in the new unity.

*The Elbe  
a frontier*

Kraft<sup>2</sup> has enumerated several cultural elements in the South German urnfields which have their roots in Hungary or the south-east. These—clay plastic, theriomorphs, *pintaderas*, rattles—have already been found as accidental elements in the Lausitz culture.<sup>3</sup> That the 'horn-shaped' fire-dogs have the same antecedents seems probable, but cannot be proved in view of the questionable date of the Hungarian specimens, e.g. from Lengyel.<sup>4</sup> The 'experienced miners' postulated by Kyrle<sup>5</sup> could in Central Europe only be found in Slovakia or Hungary, and the bronze technique disclosed in the urnfields was essentially Hungarian. Perhaps the Soroksár type of urn (Fig. 155) may have contributed to the formation of the pillar-urns. Otherwise the Hungarian influence might be accounted for by external relations attested for the end of the Middle Bronze Age by the cylinders and pendants from Oberpfalz, and later by the Hungarian swords from the Tyrol and Bavaria and the mace-heads from Bohemia. On the other hand, the influence of the Hungarian bronze culture on the frontier civilizations of Lower Austria went deeper. We have, for instance, types of the Tószeg-Egyek group at Gemeinlebarn (Fig. 178c). The conversion of the urn with cylindrical neck into an ossuary might well have taken place in that region. The fine fluted ware is richly developed there, and might even have grown up

*South-  
Eastern  
elements*

<sup>1</sup> I know a few stray ones in Moravia, e.g. Gottwald, pl. vi, 13. The fibula being a late and accidental element in both groups, the contrast between the two-member series east of the Elbe

and the one-member brooches west of that river loses its significance.

<sup>2</sup> *Bj.* 131, pp. 178 f.

<sup>3</sup> p. 330 above.

<sup>4</sup> p. 283 above.

<sup>5</sup> p. 341 above.

in Austria out of a fusion between survivals of the Baden type with Aunjetitz elements. It is therefore tempting to bring a substantial element of the new population from this quarter. This explanation might be combined with II a if it be admitted that Lausitz settlers had reached Lower Austria at the beginning of the Late Bronze Age,<sup>1</sup> or that the Lausitz culture there was parallel to rather than dependant on that of Lausitz proper.

We incline to consider the new factor in the urnfield cultures of Bavaria to be due to the amalgam of late Aunjetitz, Gáta, and Lausitz elements created in Lower Austria. A movement of the new composite group towards Bohemian tin and Alpine copper, bringing it under the influence of the Bohemian and Bavarian tumulus cultures respectively, would have resulted in the formation of the two groups just described.

*Italian  
influence*

In the urnfields we meet from the start a series of accidental forms generally regarded as of Mediterranean or rather Adriatic origin. That attribution is patently correct in the case of the glass beads, the Peschiera fibulae from the Tyrol,<sup>2</sup> and perhaps even the looped type from Grünwald.<sup>3</sup> The southern origin of the razors and bronze vessels is less obvious. The early razors from Oberpfalz and Bohemia might rank as a local invention did they not sometimes betray the indent that links them in an irreversable manner to the Italian and Sicilian series;<sup>4</sup> the later penannular type A4 is probably a native development despite a few parallels from Upper Italy.<sup>5</sup> Bronze cups resembling the North Alpine specimens in shape first occur in the hoard at Tolfa<sup>6</sup> but, as Reinecke<sup>7</sup> remarks, there is no reason why such hammered work should not have been produced north of the Alps. As a matter of fact neither the smooth cups nor the wheeled bowls can be matched in Italy. The knife dagger, Plate I, B4, is a late Mycenaean type<sup>8</sup> but again

<sup>1</sup> Franz and Mitscha-Marheim (*BRGK.* xvi, p. 21) incline to recognize a phase of Lausitz culture in Lower Austria belonging to Reinecke C. And of course we have proto-Lausitz graves scattered about at much the same time.

<sup>2</sup> Identical types from Pianello, *BP.* xl, p. 138, fig. 35.

<sup>3</sup> Found with proto-Geometric pottery on Kephallenia, Blinkenberg, *Fibules*, fig. 13b. Cf. MacIver, *Villanovans*, pl. 19, 13 (Pianello); but the

double-spiral catch-plate at Grünwald is a Hungarian addition.

<sup>4</sup> Cf. *Dawn*, figs. 48, 49. Since this indent occurs in Sicily, which is independent of North Italy in Siculan II, the feature cannot be regarded as Continental.

<sup>5</sup> *BP.* xl. pl. vi.

<sup>6</sup> MacIver, *op. cit.*, pl. 18, 1-2.

<sup>7</sup> *AuhV.*, p. 213, n. 1.

<sup>8</sup> Evans, *Archaeologia* lix, pp. 82 and 113; fig. 90.

occurs at both ends of the Apennine Peninsula.<sup>1</sup> It may be presumed, too, that the revival of spiral ornamentation illustrated on the sword-hilts was due to Mycenaean influence, and here again the Adriatic<sup>2</sup> must have been the mediator.

Relations at this time were not one-sided. In Upper Italy we find pins of types D<sub>I</sub>, D<sub>II</sub>, &c.,<sup>3</sup> wheel-pendants,<sup>4</sup> twisted torques,<sup>5</sup> and other types that seem certainly to have come from beyond the Alps and serve in a general way to confirm the dating of the Late Bronze Age suggested on p. 255.

*North  
Alpine  
type in  
Italy*

We cannot at the moment go further and point to any North Alpine group as the ancestor of the Villanova or proto-Villanova (Pianello) culture. Despite the parallelism of the bronze industries and frequent interchange of their products only the early Alban cemeteries include pottery that looks at all 'North Alpine'.<sup>6</sup> As a matter of fact it is the Comacine culture rather than the more easterly groups round Bologna and Este that show most affinity to the North Alpine area.

<sup>1</sup> Montelius, *VCI.*, pl. 4, 13-14, and fig. 387; Childe, *Dawn*, fig. 49.

<sup>2</sup> Kraft prefers to look to the Danube waterway, but I fail to see the evidence. Mycenaean motives are certainly embodied on the Hungarian swords, but they are later than the spirally decorated groups of Reinecke C<sub>2</sub>-D. With their decoration com-

pare rather the bone tube from Montale, Montelius, *CPI.*, pl. 19, 17.

<sup>3</sup> Montelius, *VCI.*, pl. XII.

<sup>4</sup> *Ibid.*, pl. XVI, 7.

<sup>5</sup> MacIver, pl. 19, 19 (Bismantova).

<sup>6</sup> Cf. MacIver, *Villanovans*, pl. 17, 20 (cf. the Tyrol urns), 12 (cf. bilobate cups from Herzogenberg and Velem).

## XVIII

### FROM SWITZERLAND TO BRITAIN

#### I. THE LAST LAKE-DWELLINGS

*Bronze Age lake-dwellings* IN Switzerland the inhabitants of the pile-villages on the lake shores had 'preserved their old neolithic culture long after bronze was in regular use in other parts of Europe'.<sup>1</sup> A few Early and Middle Bronze Age objects are found in many lake-dwellings which are usually designated 'neolithic' because of the immense preponderance of stone implements.

*Cemeteries* On the other hand, in the valleys several cemeteries, furnished with Middle Bronze Age objects, have come to light that bear no visible relation to any lacustrine settlements.<sup>2</sup> Those in North-Eastern Switzerland are mainly interments under barrows furnished with bronzes proper to the Swabian group of the Tumulus Culture. In the valleys of the Rhone and Aar,<sup>3</sup> on the other hand, the graves are small cists or simple trenches without any barrow over them. They are furnished with spatuliform celts (Fig. 199), triangular (A1) and bronze hilted (A2) daggers, and later short ogival swords (Pl. I, A6), and other objects of 'western' type; even halberd blades occur sporadically. Kraft<sup>4</sup> holds that these types are derived in the last resort from the El Argar culture of Spain, but that the bronze-hilted daggers represent a local development. At the same time he admits that many of the ornaments from the graves or found stray in the same region, such as ingot-torques and pins A1, A2 (one stray), A3, A4, A6, and A0, are of eastern, i.e. Hungarian or Bohemian, origin. In fact the group, which only begins about phase B of the Bronze Age, is like the Alsatian, primarily dependent upon the Danubian bronze industry. It none the less developed a distinct individuality of its own, and may be designated after Kraft the Rhone culture.

*The urn-field invasion* The advent of the urn-field folk transformed Alpine civilization. Instead of the multiplicity of small hamlets that had lined the shore of every lake in the 'Stone Age', a few much larger settlements<sup>5</sup> were built, generally farther out from the present shore. These are the lake-dwellings traditionally described as Bronze Age, which nevertheless belong in fact to

<sup>1</sup> Viollier in *MAGZ.* xxix, p. 200.

<sup>2</sup> Breuil, *JSGU.* ii, pp. 67 ff.; Viollier, *OAM.* pp. 128 ff.; *AsAg.* iv, pp. 1 ff.; *AsA.* xxvii, pp. 1 ff.

<sup>3</sup> Map in Viollier, *Les Rites funéraires en Suisse*, p. 23.

<sup>4</sup> *AsA.* xxvii (1927), pp. 5 ff.

<sup>5</sup> Gross, *Les Protohelvètes*, p. 27.



Reinecke's Hallstatt A (our Late Bronze Age E) and the succeeding period. Precisely similar settlements were established on some Bavarian lakes (Starnberg and the Federseemoor), and perhaps in the bed of the Rhine.

The position of the new villages, far from the shore, has been explained by Reinerth and Vouga as due to the lower level of the lake waters at the height of the Subboreal dry epoch. The replacement of a multitude of small hamlets by a few substantial villages seems to have been the result of a synoicism effected by the urnfield folk who, as we have seen, reached the Aar already in the first half of the Late Bronze Age.

*Low level  
of lakes*

In any case it is certain that the new epoch was ushered in by the advent of a new people. Franchet<sup>1</sup> has pointed out

*Change  
in pottery*



FIG. 199. Spatuliform celt, Villars-sous-Mont (Freiburg).  $\frac{1}{3}$

that the Late Bronze Age pottery of Switzerland marks a complete break with neolithic traditions. The pottery is now fine and evenly fired; wood and stone tools are used instead of bone in its manufacture; the clay is allowed to dry before ornaments are incised in it.

The forms include many types belonging to the urnfield cultures, notably the compound vases, feeding cups, theriomorphs (Figs. 200-2), small 'Villanovan' pots with fluted ornament<sup>2</sup> (like Fig. 195), urns with cylindrical necks and shallow dishes (Fig. 201). Some elements in the decoration are patently derived directly from the urnfield cultures, whereas others, e.g., the common fretwork motives (Fig. 202c), come from the Tumulus group or from the Rhone culture. No less valuable clues as to the origin of the new element are provided by the numerous 'moon idols' (horn-shaped fire-dogs) (Fig. 202, a) found in all the Bronze Age stations.

*Forms*

*Fretwork  
ornament*

*Fire-dogs*

From the same quarter come many of the bronze types, knives like 9 and 11, the wheel pendants and the universal pins with miniature vase-heads, while the distinctive globe-headed pin E11 is quite obviously a descendant of the bulb-head type D8 of the early urnfields.

The invaders brought with them the light, swift 'Asiatic'

<sup>1</sup> *AsA.* xx (1920), p. 166.

<sup>2</sup> Precisely as in the Tyrolese urnfields.

*New domestic horse* horse which first appears at this time,<sup>1</sup> and the horn-ended bit to control it. They also imposed their methods of house-building in so far as walls of logs replace the wattle-and-daub shelters previously used.<sup>2</sup>

*Log-cabins* The Swiss 'Bronze Age' that arose on this foundation, if rather belated, was original and creative. The superposition of the urnfield folk upon the older lake-dwellers formed an industrious and ingenious population, whose energies were stimulated by contact with remote regions and the proximity of the Villanova culture of Upper Italy.

*Metal-lurgy* The lake-dwellers were, of course, cultivators and stock-breeders, but in the Late Bronze Age they blossomed forth, above all, as skilled smiths and traders. Every village had its bronze workshop,<sup>3</sup> the remains of which are marked by innumerable moulds of clay or sandstone, hammers, ingots of copper, tin, and bronze, and fragments of the clay pipes which supplied the blast to the furnaces. Moreover, there is evidence for regular specialization at this time, since any given type, common to all the lake villages, is found in each case in greatest profusion only at one of them.<sup>4</sup>

*'Foreign trade'* The products of these expert craftsmen found a market in quite distant lands. So the distinctive Swiss type of knife (14) has been found in Silesia and Hungary, and many other widely distributed forms whose origin is to-day less certain, such as antennae and Ronzano swords, may well be of Swiss manufacture. At the same time the lake-dwellers seem to have secured control of the amber route down the Rhine as well as the west-to-east traffic in French, and perhaps even Cornish,

*Imports from Scandinavia* tin. Many exotic products—tin, lead, gold, amber, jet, and glass—and foreign artifacts are found in the lake-dwellings. Even bronze 'basins' and fibulae manufactured in Scandinavia reached Western Switzerland.<sup>5</sup> Naturally Italian manufactures were well represented. The fragment of a bronze bit of Benacci I type from Alpenquai, Zurich (Fig. 203, 2), is a fine instance.

*Villanova imports* *Weights* This great commercial activity naturally involved the use of some system of weights. In 1907 Robert Forrer recognized that certain roughly spherical or hemispherical lumps of lead (or stone) provided with bronze loops for suspension were weights. They correspond to multiples of various early East

<sup>1</sup> *MAGZ.* xxix, p. 250; a new variety of dog appears at the same time.

<sup>2</sup> Gross, *l.c.*

<sup>3</sup> Heierli, *Urgeschichte*, pp. 225-6.

<sup>4</sup> *Ibid.*, p. 219.

<sup>5</sup> *Ibid.*, figs. 311, 310.



FIG. 200. Bilobate cup, jar, and theriomorphic vase, Alpenquai. M. Zurich, after MAGZ

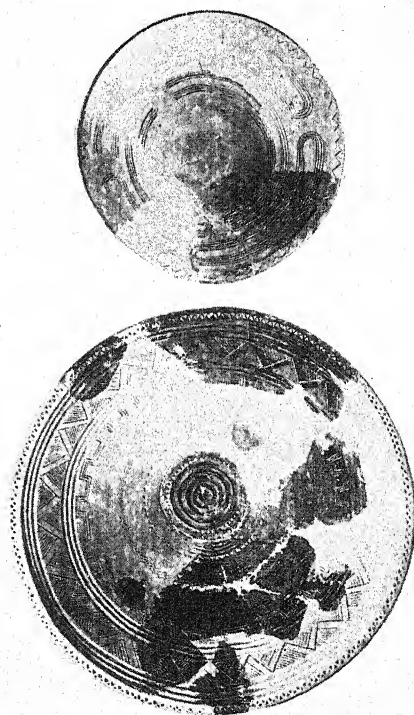


Fig. 201. Dishes viewed from inside, Alpenquai



Mediterranean weights—the Aeginetan, Phoenician, Egyptian (Italic) or Carthaginian mina respectively.<sup>1</sup> Certain types of ring may have served as currency.

The enumeration of all the bronze types current would be tedious. The more important only need be mentioned. By far the commonest celts are the type with wings near the butt and a loop at the side including specimens with a transverse blade like Fig. 203, 11. Socketed celts are quite rare, but socketed chisels are as common as winged celts. Bronzes  
Winged  
celts

The knives include many forms such as 10, 12, and 13, but 14 alone is distinctively Swiss and indubitably a local form. The commonest razor is the penannular form, but single-bladed crescents are also found (Fig. 203, 4). Knives  
Razors

The favourite weapons were antennae or Ronzano swords, which may have been manufactured locally. Swords

Of the innumerable pins, that with a great hollow globular head ornamented with holes encircled by engraved rings (E11) was a distinctive local type. Fibulae are far from common. The great majority, and particularly the ribbed form (A"2 a), seem Italian imports. Pins

A speciality of West Switzerland was a thick, hollow armlet of penannular form adorned with concentric circles united by parallel lines.

Rings, wheels, lunulae, &c., served as pendants.

Stone and horn were now scarcely used for implements. Stone and horn were now scarcely used for implements. Horn cheek-pieces for bits were not uncommon. Besides these occur bronze bits of various forms; one very primitive specimen has a rigid snaffle bar. It quite possibly represents a local translation into metal of the older type with a wooden or leather snaffle. Bits

Though older types naturally occur, the Bronze Age lake-dwellings appear to begin in the latter half of the Late Bronze Age (Reinecke's Hallstatt A). The lower limit for their existence is supplied not so much by occasional iron objects as by sherds of Hallstatt B(C) pottery painted in black and red or in graphite on a matt black ground.<sup>2</sup> Alpenquai and many other sites were abruptly deserted after this, but some villages on the western lakes may have survived the catastrophe. The regular Bronze Age lake-dwellings do not, however, long outlast the first third of the first Iron Age (Reinecke Hallstatt B). Relative  
date

<sup>1</sup> Forrer, *Nouvelles Acquisitions*, p. 40.

<sup>2</sup> *MAGZ.* xxix, p. 197; cf. Reinecke, *AuhV.* v, p. 321.

*Italian synchronisms* Italian imports allow us to give an approximate absolute value to these typological limits. The most distinctive import, the bit from Alpenquai, belongs to Benacci I,<sup>1</sup> but types of the succeeding phase are not entirely missing.<sup>2</sup> Hence on Randall MacIvar's figures the Swiss Bronze Age villages flourished from 1050 to about 800 B.C.—figures which agree well enough with the general Bronze Age chronology set out on p. 256.

*Abandonment of villages* After the latter date the villages perished by fire. Their destruction must in part be due to the onslaughts of Hallstatt barrow-builders from the Middle Danube basin.<sup>3</sup> But the rising of the lake waters, consequent upon the onset of the Subatlantic climatic conditions, must have been the main cause of their final desertion.

## II. THE RHENISH URNFIELDS

*Intrusive and native cultures* The urnfield cultures spread rapidly all down the Rhine, reaching Holland and Northern Belgium during the second phase of the Late Bronze Age. The expansion into the Rhine valley may well have begun already in the earlier phase (Reinecke D), and doubtless took place in several waves and very likely by several routes, just as had the original colonization by the Danubians in neolithic times. At the same time the urnfield folk encountered not only tumulus-builders as in Bavaria, but very likely also remnants of the Adlerberg population still living in the valleys. Hence the Rhenish urnfields, despite many common traits,<sup>4</sup> present on closer examination a very diversified aspect. Kraft<sup>5</sup> has very effectively emphasized this diversity and sought to unravel the complex events that caused it. He recognizes two main currents: an earlier group in phase D, coming from Upper Italy and characterized by swords like A3 (in a special variant) and pins like E9, and a later with swords of series C, and pins like E10.

*North Alpine urns* In the last chapter we mentioned several cemeteries from the Upper Rhine and from the Neckar containing bronze and ceramic types distinctive of the North Alpine urnfields. The northernmost point known to the author is Rheingönheim in

<sup>1</sup> Cf. MacIver, pl. iv, 1.

<sup>2</sup> The fibula from Hauterive (Gross, *op. cit.*, pl. xviii, 64) is already an Arnoaldi form.

<sup>3</sup> Keller-Reinerth, *Thurgau*, p. 76; cf. p. 410, below.

<sup>4</sup> Summarized by Reinecke, *AuhV.*

v, pp. 243 ff.

<sup>5</sup> *Bj.* 131, pp. 162 ff.; *AsA.* xxix, pp. 74-90, 137-48, 209-16 to be continued in xxx. (It is impossible here to incorporate the complex details of these very valuable but difficult and still incomplete papers.)

the Palatinate.<sup>1</sup> These cemeteries are monuments of an advance that may have well begun already in Reinecke D. It profoundly influenced the culture of the natively Rhenish tumulus-builders, especially those who, like the tribes living round Haguenau,<sup>2</sup> dwelt right on the borders of the good agricultural land occupied by the urnfield folk.

On the Middle Rhine, especially on the west bank (Palatinate and Rheinhessen), but also in Oberhessen, there are several cremation burials without urns belonging typologically to Reinecke's phase D. Characteristic of these graves are double-bladed razors of the early type (2),<sup>3</sup> knives like 12, and poppy and shepherd's crook-pins. The pottery includes jugs and cups of later fretwork ware<sup>4</sup> or fluted vases. The former represent the survival of a native tradition; in the latter influences from Bavaria are perhaps detectable. Since in some cases the graves in question actually occur in cemeteries already used by the Early Bronze Age Adlerberg folk (e.g. on the Adlerberg itself), it might be argued that they belong to descendants of that people. The burial rite and the bronzes none the less reveal the influence of the urnfield cultures of Kraft's 'North Italian' group.

*Cremations without urns*

*Relation with Adlerberg culture*

The largest group of urnfields on the Upper and Middle Rhine (extending as far as the Sieg), on the Neckar, and on the Main from the vicinity of Würzburg down stream, contain a very distinctive furniture.<sup>5</sup>

*Main group*

The ossuary proper is often small but it, and the remaining grave goods, are usually (but not always) contained in a huge urn or dolion. The dolion is rough and ornamented, if at all, only with plastic rope mouldings. It is frequently (I) a typical representative of the North Alpine urn with cylindrical neck,<sup>6</sup>

*Dolion*

<sup>1</sup> Typical urn (almost exactly like fig. 189) in M. Speyer.

<sup>2</sup> Schaeffer, *op. cit.*, pp. 251 f. (use of cinerary urn, wart decoration, *Seelenlöche*, stone celts, knife 12).

<sup>3</sup> Adlerberg, cf. Reinecke, *AuhV.* v, p. 213; pl. 2, 546. Behrens, pl. xx.

<sup>4</sup> Adlerberg, cf. Reinecke, *AuhV.* v, p. 213; pl. 32, 546; Behrens, pl. xx.

<sup>5</sup> Typical sites are: Upper Rhine-Neckar; Burladigung (Hohenzollern) (*AuhV.* v, pl. 44), Birkle bei Asch, near Blaubeuren (*ib.*), Wingersheim (Alsace) (*BRGK.* vii, p. 201). Neckar: Mürr (Paret, fig. 9), Neuenstadt a. K. (*FbS.*, 1914, pl. 11), Mannheim (Wagner, ii, fig. 265), Eberstadt (near Darmstadt)

(*AuhV.*, l.c.). Main: Tauberrettersheim, Goldbach, Grossostheim, Mellrichstadt, Essfeld, &c. (*Frankenland*, 1914, pl. 11), Hanau (*AuhV.* v, pl. 44). Oberhessen: Friedberg (Behrens, fig. 50), Muschenheim (*PZ.* xi-xii, p. 126). Rhein below Main: Urmitz (Behrens, pl. xxii, B), Andernach (*Mannus IV Ergbd.*, pl. x, B), Nauheim, Franzhausschen (M. Cologne).

<sup>6</sup> e.g. Goldbach near Aschaffenberg, Framersheim near Alzey (Behrens, pl. xxi, e) Muschenheim (Oberhessen) *PZ.* xi-xii (1919-20), p. 126, Nauheim (M. Cologne).



but quite as often (II) the wide rim, distinctive of that group on the Danube or the Elbe, is omitted,<sup>1</sup> both variants occurring side by side. In a third variant (III) the body is angular and definitely biconical, while even the neck is slightly conical.<sup>2</sup> Finally, we find cases in which the open jar, such as we saw at Eisenbichl near Reichenhall (Fig. 192 b), is used as an urn.<sup>3</sup>

#### Ossuary

The ossuary proper and the accessory vases are of a very fine fabric, generally dark faced and ornamented with horizontal facets, grooves, fine incisions or, rarely, bosses. The angular profiles, broad faceted rims and stepped shoulders, are unmistakable. The ossuary has a slightly conical neck and recalls the Villanova form in general outline, though the neck is relatively shorter than in Upper Italy (Fig. 204c). On the Main vases of this type are sometimes provided with two handles at the base of the neck when they remotely resemble Lausitz amphorae<sup>4</sup> (Fig. 204a). Variants with a single handle are also known<sup>5</sup> (Fig. 204b).

The remaining vases from graves are small variants of the ossuary and dishes with wide faceted rims and small bases (Fig. 204d). Rattles and feeding-bowls occur sporadically.

#### Weapons

Graves of this group are furnished sparingly with weapons (antennae and Ronzano swords, socketed arrow- and spear-heads). Celts are represented only by rare *stone* specimens.<sup>6</sup> Penannular razors and a large assortment of knives are more common.

#### Ornaments

The ornaments include compound collars (G2) as at Grünwald, globe-head pins (E10), including pure Swiss types (E11),<sup>7</sup> and those with a miniature vase-head, and two-membered fibulae types B3<sup>8</sup> and B4.<sup>9</sup> Big anklets of type 3 Fig. 170<sup>10</sup> have been obviously taken over from the Tumulus culture. Glass

#### Gold

beads and gold are rare. The precious metal, however, occurs in the form of rings of type 1a and of disks stamped with groups of concentric circles. Finally, we may note several bronze cups.

#### Flat-graves and barrows

Pottery and bronzes of the types just described were usually found in urnfields, but precisely the same material occurs

<sup>1</sup> *AuhV.* v, pp. 236 f., figs. 2 and 4 = Behrens, pl. XXI, a-d, and fig. 41.

<sup>2</sup> Mannheim, Wollmesheim II (Rhenish Palatinate), Friedberg (Oberhessen, Behrens, fig. 50, 3), Andernach, *Mannus IV Ergbd.*, pl. x, B, 22-3.

<sup>3</sup> Heidesheim, Heilbronn, Fechenheim (PZ. xi-xii, p. 143).

<sup>4</sup> *Frankenland*, 1914, pl. II, 10 and 16.

<sup>5</sup> *Ibid.* 13.

<sup>6</sup> e.g. Nauheim M. Cologne.

<sup>7</sup> Bretzenheim nr. Mainz, *AuhV.*, pl. 43.

<sup>8</sup> Behrens, figs. 45-6; *RGM. Festschrift.*, 1927, p. 137.

<sup>9</sup> Burladigung, Fuchstadt, Wollmesheim I and II.

<sup>10</sup> Essfeld near Aschaffenburg, Wollmesheim I and II.

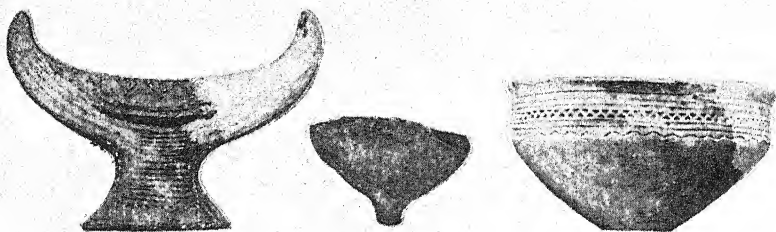


FIG. 202. Fire-dogs and bowl, Alpenquai. M. Zurich

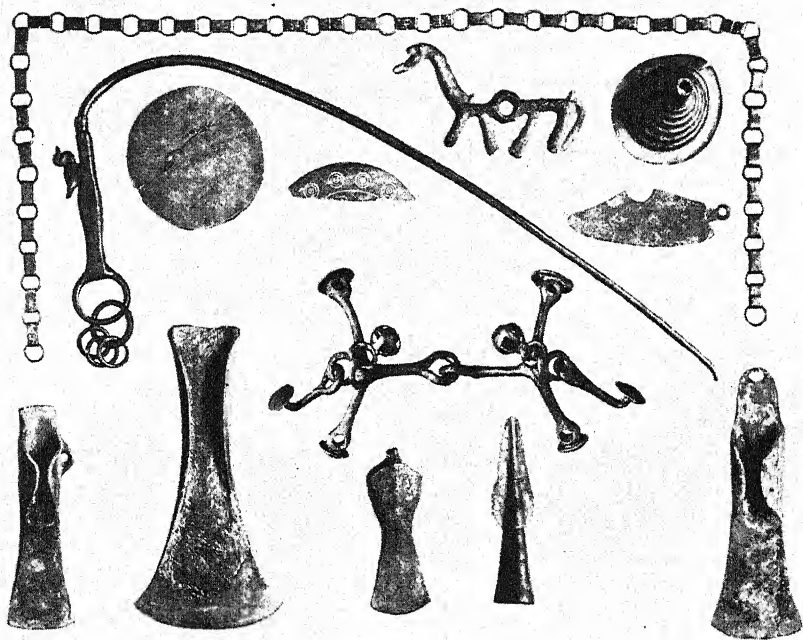


FIG. 203. Bronzes : bit, chain, pins, celts, &c., from Alpenquai

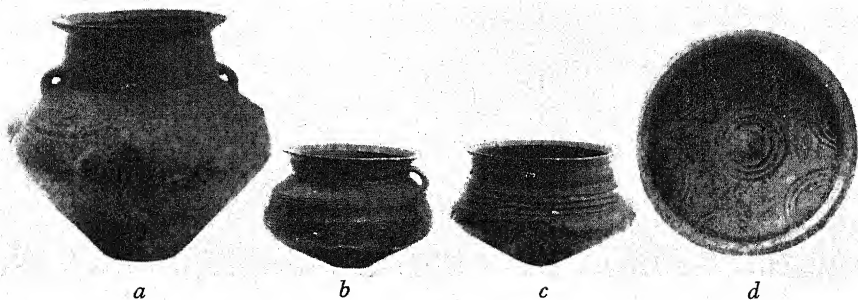


FIG. 204. Pottery of Frankonian urn-fields. *a*, Tauberrettersheim; *b*, Essfeld; *c*, Melrichstadt; *d*, Goldbach.  $\frac{1}{3}$



sometimes under barrows.<sup>1</sup> Far more irregular are flat inhumation graves containing a similar furniture and sometimes actually forming part of an urnfield. Often such inhumation graves are peculiarly rich. At Wollmesheim in the Palatinate<sup>2</sup> one grave contained the skeletons of a man and his wife, urns of variant III, a sword of type C4, arrow-heads, two anklets of type 3, a fibula of type B4, and other bronzes. Near by were two cremation interments in urns, accompanied by the same types of anklet and fibula as the skeletons.

*Inhumations*

This group is generally treated as a mere development of the North Alpines group under the influence of Italian and Swiss metallurgy. The form and ornamentation of the faceted pottery in particular would be due to the imitation of metal forms.<sup>3</sup> Kraft,<sup>4</sup> on the other hand, would recognize here a cross between the North Alpine groups and currents from the Lausitz and Bohemia coming down the Main. This stream would have brought with it the ceramic fluting from which the facets evolved, certain pot-forms, and the two-membered fibulae.<sup>5</sup> The occurrence of a biconical ossuary of Lausitz form<sup>6</sup> at Weisenheim in the Palatinate is certainly favourable to the idea. So too, the amphorae, like Fig. 203a, from the Main cemeteries might be regarded as descendants of the Lausitz amphora.

*Relations with North Alps*

*and with Lausitz*

If, however, we look farther east to the Upper Weser basin we see that round Fulda the urnfield culture is inspired rather from the south-west than from the east. The urns belong for the most part to the Rhenish types I,<sup>7</sup> III,<sup>8</sup> (and IV<sup>8</sup>), and are associated with very late vase-head pins, a degenerate variant of pin E11 with much reduced head, and perhaps even bits of iron. The cemeteries therefore produce a definite impression of lateness as contrasted with those on the Rhine or Main. Hence, though ossuaries, having the form of a Lausitz amphora, do occur,<sup>9</sup> we cannot regard these late remains as favourable to the idea of West Lausitz prototypes for the Rhenish urnfield culture. If a strong current from the east were affecting the latter we should expect to find evidence for it first in a place like Fulda, whereas the contrary is the case.

*Fulda shows Lausitz influence small.*

<sup>1</sup> Jagstfeld, Grossostheim, Birkle bei Asch (*AuhV.* v, p. 234).

<sup>2</sup> M. Speyer, Behrens, p. 246; cf. also Mannheim, Wagner, *op. cit.*

<sup>3</sup> So Reinecke, *AuhV.* v, l. c.

<sup>4</sup> *Bj.* 131, pp. 207-8.

<sup>5</sup> Kraft adds the bronze cups and the

razors, but this is impossible; both are 'southern', on the Main.

<sup>6</sup> *Bj.* 131, p. 212.

<sup>7</sup> Lanneshof, *Fuldaer Gesch. Ver.* vii.

<sup>8</sup> Uffhausen, *ibid.* xii (1914), pl. II.

<sup>9</sup> *Op. cit.* vii, pl. IV, 10; xii, pl. II, 3.

We incline, therefore, to think that Kraft has over-estimated the direct Lausitz influence on the Rhine.

A detailed account of the urnfield culture on the Middle Rhine is superfluous, since it reproduces almost precisely what we have already described in the Upper Danube basin and Switzerland. All the main traits noted there—regular villages, agriculture, industry and trade, and peculiarities of detail such as the horned fire-dogs<sup>1</sup>—recur farther north, albeit in a poorer form. The distribution of the many hoards<sup>2</sup> and their contents disclose trade routes from the north from the Upper Weser basin across the Wetterau to the Lower Main, and from the west via the Moselle as well as from the east up the Danube to the Upper Rhine and across the Furth gap to the Upper Main.

*Trade* The first route brought, with amber, objects of Scandinavian type such as the plate fibulae and 'suspension basins' similar to those that we have already met in Switzerland.<sup>3</sup> Many of the gold objects, particularly the remarkable 'hat' from Schifferstadt in the Palatinate<sup>4</sup> (exactly like one from Avanton in the Department of Vienne), and perhaps also the numerous gold 'sun-disks' ornamented with stamped circles, would be made of French (or Irish) gold.<sup>5</sup> Hungarian and Bohemian types, apart from those brought with them naturalized by the urnfield people, are, on the other hand, rare. The main inspiration of the Rhenish industry came from Switzerland (pins like D4, Ero, hollow armlets with circle ornaments,<sup>6</sup> penannular razors, antennae and Ronzano swords, &c.), and through Switzerland from Italy (Villanova forms in the pottery).

*Swiss influence*

The urnfield cultures may have developed for a long time in the valleys side by side with the remains of the old Tumulus culture in the highlands of Wurtemberg, Baden, the Odenwald, and the Taunus. Clearly it lasted well into the Iron Age proper.

*Intrusion of inhumationists*

Eventually it came under the influence of the Hallstatt barrow-builders using painted pottery, iron, and Hallstatt swords. The Gündlingen culture of Schumacher<sup>7</sup> which Rei-

<sup>1</sup> The Rhenish specimens are enumerated and mapped by Behrens, *Mainz. Festschr.*, 1927, pp. 131 f. They extend down the Rhine from Alsace to Gladbach.

<sup>2</sup> Map in Behrens, *Bronzezeit*, pl. 1-11.

<sup>3</sup> Behrens, p. 61.

<sup>4</sup> *Ibid.*, p. 21: assigned there to the Middle Bronze Age, but Reinecke

rightly attributes it to his phase D (*AuhV.*, v, p. 214).

<sup>5</sup> They are naturally to be connected with forms like *B.M. Bronze*, fig. 119. Note, however, that the patterns occur on bone disks in Italy apparently even in phase D.

<sup>6</sup> e.g. Behrens, fig. 11.

<sup>7</sup> *Rheinland*, pp. 86 ff.

necke<sup>1</sup> has made into a special phase, B, of the Hallstatt period, seems in reality to be the result of the first contact between the urnfield folk and native Tumulus people on the one hand, and the invaders advancing from the east on the other; at least the urn and other ceramic types are only modifications of those already found in the Late Bronze Age settlements of Lower Bavaria and the Franconian barrows. Its authors would thus have been the neighbours rather than the precursors<sup>2</sup> of the nomadic tribes of mounted hunters and pastoralists who interred their dead under the barrows of the Koberstadt and Alb-Salem groups.<sup>3</sup>

### III. THE LOWER RHINE AND BRITAIN

On the Lower Rhine below Cologne genuine urnfields of the South German type are no longer forthcoming. On the other hand, the later tumuli approximate in many respects to urnfields and intrude into Holland (Limburg and Brabant) and Belgium. The burial rite is always cremation; the ashes, enclosed in an ossuary, are buried in shallow pits dug in virgin soil; the barrows are very low and cluster together to form regular cemeteries. Dutch and Belgian archaeologists in fact always term these late groups of barrows urnfields. *Barrows and urnfields*

These modifications of the earlier burial rites suggest an admixture of urnfield folk with the old barrow-builders, and the grave goods confirm that impression.

The commonest urn is a bulging type with short cylindrical that should probably be considered a descendant of the Rhenish type II, though Rademacher regards it as native.<sup>4</sup> The angular urn of type III is less common but is, however, known even in Holland.<sup>5</sup> The open urn type IV also occurs.<sup>6</sup> *Urn*

Broad rimmed dishes and small pots of Villanovan form like Fig. 195<sup>7</sup> also occur.

The ware is generally brownish in colour, and the southern ornamentation by fluting or grooving is rarely seen. On the other hand, the urns and accessory vases are frequently adorned *Native elements in decoration*

<sup>1</sup> *AuhV.*, pp. 313 f.

<sup>2</sup> The analysis of Stampfuss (*Mannus Ergbd.* v, pp. 58 ff.) is fatal to Reinecke's attempt to create a period out of the Gündlingen culture.

<sup>3</sup> Schliz, *AfA.* ix, p. 240, claims to have found craniological evidence for the intrusion of a new ethnic element from the Middle Danube that might be inferred from the 'Illyrian types'.

<sup>4</sup> *Mannus Ergbd.* iv, p. 125; but cf. Kraft, *Bf.* 131, p. 163.

<sup>5</sup> Holwerda, *Nederlands*, pl. II, 8 (Bergeik); *Oudh. Meded.* vii (1913), fig. 53, 53 (Riethoven); cf. *Mannus Ergbd.* v, pl. v, 8 (Wettweiss).

<sup>6</sup> e.g. at Weert, Holwerda, *op. cit.*, pl. II, 3 and 9.

<sup>7</sup> Bergeik, *ibid.*, pl. II, 10.

with bands of late fretwork motives (stamped) round the shoulder.<sup>1</sup> This technique plainly belongs to the native barrow-builders who had practised it already in the Middle Bronze Age.<sup>2</sup>

*Bronzes* The Lower Rhenish urn burials are practically without bronze furniture. We have at best a couple of knives like 12<sup>3</sup> and a unique type from Wesel, pins with decadent poppy- or vase-heads,<sup>4</sup> tweezers, and looped buttons.<sup>5</sup> A perforated stone axe was found in one grave at Riethoven, but without ceramic remains. A Ronzano sword found in the Waal<sup>6</sup> must have been brought to Holland by the urnfield folk.

*Chronology* The poverty of bronzes makes a relative dating of the Lower Rhenish and Dutch cemeteries difficult. Holwerda<sup>7</sup> assigns them boldly to the beginning of our era. Rademacher<sup>8</sup> and Stampfuss<sup>9</sup> date them a thousand years earlier. Actually the truth would lie between these two views.

*End of urnfields* South of Dusseldorf and Duisburg the advance of the Hallstatt culture (Gündlingen?) limits the urnfield phase below.<sup>10</sup> Farther north this southern influence is not felt, but the culture of the type just described is eventually superseded by that which Holwerda terms 'German',<sup>11</sup> the Harpstadt type of Stampfuss<sup>12</sup> representing a later wave of the same. The German influence, characterized by biconical or open urns with finger-tip ornament *on their walls and rims* (instead of on raised strips) would, according to Rademacher,<sup>13</sup> have reached Holland about 500 B.C. An urn of this family in a late variant was found containing a Roman fibula of the first century A.D.,<sup>14</sup> but that circumstance does not oblige us to reduce Rademacher's figure for the beginning of the second or German phase in Holland materially.

*Extension to Britain* The urnfield culture of the Lower Rhine therefore appears as a last outpost of the North Alpine group that had absorbed much of the tumulus population. But its roots in the south

<sup>1</sup> *Mannus Ergbd.* iv., pl. x, B and p. 124. Holwerda, *op. cit.*, p. 99.

<sup>2</sup> Holwerda (*l.c.*) is therefore wrong in calling it 'Hallstatt'. Kraft, nevertheless, regards the Lower Rhenish ornament as derived from a later variant of the South German style (*Bj.* 131, p. 163).

<sup>3</sup> Pleyte, *Overijssel*, pl. iv, 2; *Drenthe*, pl. xxxiii, 2-3.

<sup>4</sup> *Mannus Ergbd.* v, pl. III and p. 79, n. 1.

<sup>5</sup> *Oudh. Meded.* iv (1910), pl. xviii,

2a (Riethoven).

<sup>6</sup> Holwerda, *Nederlands*, pl. xiii, 25.

<sup>7</sup> *Op. cit.*, pp. 100 ff.

<sup>8</sup> *Mannus Ergbd.* iv, p. 127.

<sup>9</sup> *Ibid.* v, p. 85.

<sup>10</sup> Rademacher, *l.c.*, p. 128.

<sup>11</sup> *Nederlands*, p. 105; its chronology is attested by the arrangement of the graves at Riethoven, *Oudh. Meded.* iv (1910), pp. 34 f.

<sup>12</sup> *Mannus*, xvii (1924), pp. 302 ff.

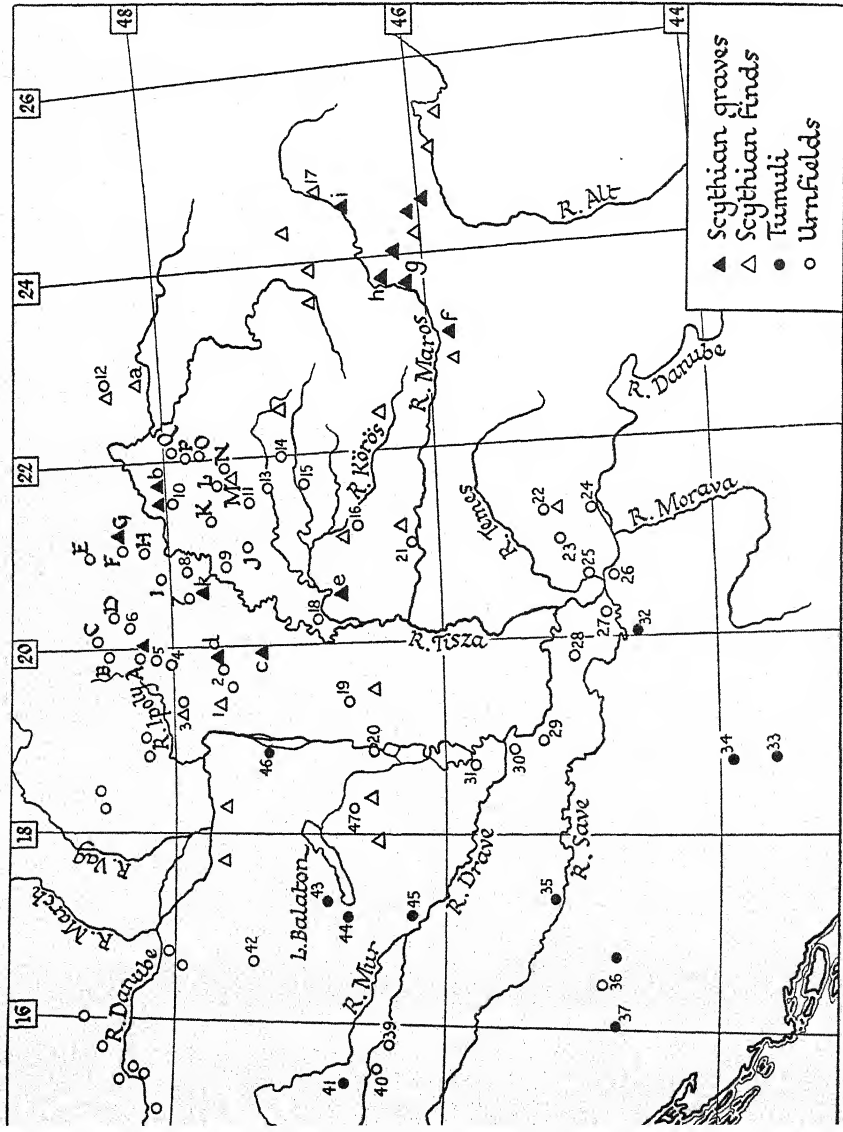
<sup>13</sup> *Op. cit.*, p. 129.

<sup>14</sup> *Oudh. Meded.* i, pp. 8 f.; cf. iv, p. 35.



were soon broken, so that it stagnated till overwhelmed by Teutonic tribes from farther east. Its peculiar interest is that the Lower Rhenish culture in its last stage crossed the sea to Britain as the finds from Scarborough<sup>1</sup> show. As at the beginning of the Bronze Age the beaker folk from the Upper Rhine, mingled with the Battle-axe folk from Central Germany, invaded Britain, so again at the end of that age the Urnfield people from the east crossed the North Sea.

<sup>1</sup> *Arch.* lxxvii, pp. 180 ff.; cf. Kendrick, *The Druids*, p. 39.



# HOARDS

- A Salgótarján
- B Rima-Szombat
- C Felső Balog
- D Sajó Gömör
- E Buzita
- F Forró
- G Abaúj Szantó
- H Felső Dobsa
- I Aranyos
- J Hajdu Szoboszló
- K Hajdu Bőszörmény
- L Hajdu Sámson
- M Debrecen
- N Acsád Opirisce
- P Maria Pócs
- Q Kántor jánosó

- 20 Gerjen
- 21 Pécska
- 22 Vattina
- 23 Alibunar
- 24 Dubovac
- 25 Omoljica
- 26 Vinča
- 27 Surčin
- 28 Ruma
- 29 Vukovar
- 30 Dályá
- 31 Kiskőszeg
- 32 Joševa
- 33 Osovo (Višegrad)
- 34 Glasinac
- 35 Donja Dolina
- 36 Jezerine
- 37 Ripač

# LATE BRONZE AGE

## SITES

- 1 Aszód
- 2 Hatvan
- 3 Pilin
- 4 Kisterenne
- 5 Zagyvápálfalva
- 6 Tornalja
- 7 Harsány
- 8 Mohi
- 9 Egyek
- 10 Gáva
- 11 Hajdubagoss
- 12 Munkacs
- 13 Berettyó Újfalu
- 14 Bihar
- 15 P. Szt. János
- 16 Gyula Varsánd
- 17 Gernyeszeg
- 18 Szelevény
- 19 Kiskörös

- 39 Péttau
- 40 Maria Rast
- 41 Wies
- 42 Velem Szt. Vid
- 43 Somlyó
- 44 Keszthely
- 45 Csurgó
- 46 Erd Batta
- 47 Tamási

# SCYTHIAN FINDS

- a Bene
- b Bercel
- c Tapio Sz. Marton
- d Gyöngyös
- e Gyoma
- f Piski
- g Nagy Enyed
- h Maros Gombos
- i Maros Vásárhely
- k Zöldhalompuszta

Map X. SCYTHIAN AND LATEST BRONZE AGE SITES IN HUNGARY

## XIX

### THE END OF THE HUNGARIAN BRONZE AGE AND THE SCYTHS

IN Slovakia and the Hungarian plain the regular use of iron was not introduced from the south-west but from the east. But the new metal was only adopted long after the original Bronze Age civilization had been reduced to chaos by the incursion of Lausitz folk from the north-west, and when a brilliant, if belated, Bronze Age culture had arisen out of the fusion of intrusive and autochthonous elements.

We have already noted that the Lausitz people advanced in a compact mass as far as Central Slovakia.<sup>1</sup> But they certainly extended their domain much farther south, overrunning the whole plain and even crossing the Balkans by the Morava-Vardar road to make temporary settlements in Macedonia. The results of this incursion were to remodel the boundaries of the cultural provinces, sketched in Chapter XIV, and to alter their civilization more or less profoundly.

*The Lau-  
sitz inva-  
sion*

The current of invasion probably followed two routes. Its effects west of the Danube are described in Chapter XX. The changes in the plain and east concern us here. In the north elements from our groups 1 and 5 were absorbed in a hybrid culture in group I, in which the intruders were at first dominant. Other elements from group 1 seem to have been brushed aside westward, and people from group 5 were driven across the Tisza to form a new compound, group II, with older Transylvanian constituents. The southern settlements of group 1<sup>2</sup> and apparently the whole of group 2 vanish, while group 4 extends its domain to the Danube at Gerjen, to Syrmia, and perhaps up the Maros as group III, while a IVth group is vaguely discernible among the hills of Transylvania.

#### I. THE NORTH HUNGARIAN GROUP

The composite group I occupies the whole zone fringing the metalliferous mountains of Slovakia and North Hungary from the Hron (Gran) and the Danube to the steppe country in Hajdu County beyond the Tisza. From this area we have im-

<sup>1</sup> p. 324 above.

<sup>2</sup> Nevertheless a few typical fluted cups, as in Tószeg D, are found sporadically in cemeteries of group 1, as at

Dunakeszi and Vátya, proving a partial survival of these urnfields into Period VI.

portant settlements, enormous urnfields, and a vast number of rich hoards. These evidently cover a long period beginning quite early in the Late Bronze Age and lasting well into our Period VII.

*Villages* The settlements include villages on hills like Pilin and 'terremare', like the upper strata at Tószeg, Tiszafüred, and Szihalom, while remains of the period are found in many caves that have also yielded Bükk ware.

*Metal working* Some settlements have been excavated, but unfortunately no detailed reports are available. It is clear that defensible heights were chosen, as in the Tyrol, and some centres, e.g. Pilin, may have been fortified. The distribution of the largest villages round the metalliferous mountains suggests that they were connected with metallurgy. Numerous moulds from Pilin,<sup>1</sup> Aszód,<sup>2</sup> Felső-Kubin,<sup>3</sup> together with fragments of blast-pipes and metallurgical tools, confirm this impression. As we shall see, the metal trade brought to the region a variety of foreign imports, while a multitude of quite distinctive local types were evolved and distributed over a wide area.

*Cemeteries* The cemeteries were adjacent to the settlements, and in some cases two or more were attached to the same village; no less than six have been located in a small area round Hatvan.<sup>4</sup>

*Urns* In the cemeteries cremation was universal. The urns vary greatly in form; no two urns were alike in the twenty graves excavated at Zagyvapálfalva.<sup>5</sup> The most usual type is bulging or piriform, with a slightly conical neck and everted rim. There are often two or more small handles just under the belly (Fig. 205, 2) or sitting on the shoulder as in 'Silesian' urns (Fig. 206, b). More rarely the handles join the rim and shoulder in a manner reminiscent of Gáta (Fig. 206, a). A less common type of urn is just a large open-mouthed pot like the Lausitz forms 7-8 (Fig. 205, 4 and 12). These last are left rough: the bulging urns are always smooth, dark-faced, and often graphited.

*Decoration* An almost universal method of decoration was the application of small warts that may be framed by grooved semicircles and combined with horizontal or vertical flutings, incised arcs or arcadings, and plastic rope mouldings as in the proto-Lausitz urn of Fig. 174.<sup>6</sup>

*Dishes* The urns were covered with dishes reminiscent of earlier

<sup>1</sup> Hampel, pl. iv.

<sup>2</sup> *Ibid.*, pl. v.

<sup>3</sup> *AE.* ii (1882), pp. 279 f.

<sup>4</sup> *CIA.* 1877, ii, p. 166.

<sup>5</sup> *AE.* xl (1923-6), pp. 60 f.

<sup>6</sup> e.g. Zagyvapálfalva, *AE.* xl, fig. 22 (left).

forms (Fig. 207), but not without parallels in the Lausitz area. Those in use at Egyek and Hajdu Bagos in particular agree with the dishes of Tószeg C both in form and ornament (Fig. 205, 8; cf. Fig. 163), but it will be noticed that the warts are degenerate in comparison with the older specimens.

The accessory vases include numerous Lausitz forms: amphorae, fluted,<sup>1</sup> or even wart-ornamented,<sup>2</sup> cups with shoulder flutings (Fig. 205, 9a), turban dishes<sup>3</sup> and pots of Lausitz type 7-8.<sup>4</sup> According to Pič,<sup>5</sup> even a Lausitz ossuary of type 2 was found in one of the cemeteries near Aszód.



FIG. 205. Pottery from Egyek and Hajdubagos.  $\frac{1}{10}$

The pottery thus shows a combination of two traditions. If many of the urns and the style of their decoration may be descended from native Hungarian types, the intrusive element is attested by the Lausitz forms just enumerated.<sup>6</sup>

The graves are very poorly furnished with bronzes, and these have an extraordinarily archaic look. Weapons are restricted to atypical daggers, knives, and socketed arrow-heads, though miniature palstavs, socketed celts, swords, and button sickles, found at Pilin,<sup>7</sup> may have been made for funerary use. The ornaments reveal a mixture of native types, already familiar in the Middle Bronze Age of Hungary, and innovations that were

<sup>1</sup> Mohi Puszta, Kisterenne, Aszód.

<sup>2</sup> Egyek (M. Munkačevo).

<sup>3</sup> Mohi Puszta, Egyek, Tószeg, Aszód, Dunakeszi.

<sup>4</sup> Mohi Puszta, Egyek, &c.

<sup>5</sup> *ibid.*, p. 16.

<sup>6</sup> We should note imported vases of

Puszta Szt. János ware from Egyek and Aszód (Hampel, pl. LXXIII, 3), and a variety of jug that occurred in group 4 at the end of Period V (*ibid.*, pl. LXXXVIII, 3; Hatvan).

<sup>7</sup> Hampel, pl. LXX.

at home in the Lausitz or Bohemia. To the former group belong, besides the simple shape F<sub>1</sub>, the bracelets B<sub>2</sub>,<sup>1,2</sup> C<sub>2</sub>,<sup>3</sup> D<sub>1</sub> (thin),<sup>2</sup> pins A<sub>0</sub> (everywhere), C<sub>5a</sub>,<sup>3</sup> E<sub>12</sub>,<sup>2</sup> B<sub>7</sub>,<sup>1,2</sup> tutuli like A<sub>2</sub>,<sup>3</sup> and A<sub>0</sub> and pendants like type B<sub>3</sub>,<sup>3</sup> developing into B<sub>4</sub>.<sup>2,3</sup>

*Foreign types* As foreign forms we may reckon the twisted torque AB<sub>1</sub>,<sup>1</sup> finger rings with double spiral ends,<sup>2,4</sup> pins D<sub>4</sub>,<sup>5</sup> B<sub>10</sub>,<sup>1,2</sup> and a variant on C<sub>8</sub>,<sup>2</sup> and we may class the tweezers from Aszód and Zagyvápálfalva as intrusive too.

A curious item in the furniture of certain graves at Zagyvápálfalva<sup>6</sup> was constituted by flat stone disks to which Felső Kubin<sup>7</sup> and some Moravian urnfields offer parallels.

*Hoards* If the cemeteries illustrate the tenacity with which old native fashions were preserved in the teeth of all racial movements, the hoards illustrate the revolution caused by the Lausitz intrusion, the adaptability and wealth of some class at least in the new complex, and the extensive trade relations of North Hungary. The hoards in question occupy almost exactly the same area as the cemeteries and settlements just described, though they are particularly numerous, as might be expected, in the dangerous frontier regions beyond the Tisza. Though only a few types found in the cemeteries recur in the hoards,<sup>8</sup> there are no other connected remains to which the latter can be attached. And yet it is clear that many of the types they contain were created in North Hungary. Hence we must conclude that the people who made and used the objects from the depots were the same as those buried in the cemeteries, or at least a class among the latter.

*Division into phases* The hoards are not all contemporary. Though some are useless for dating purposes, being mere collections of scrap metal, it is possible to divide the rest up between two or three phases, of which the last already falls certainly into Period VII.

*Supremacy of socketed celt* The perforated axe went out of use altogether. Its place was abruptly taken by the socketed celt, which suddenly appears in great numbers in all the hoards belonging to Period VI.<sup>9</sup> Moulds for its manufacture were found in the settlements of

<sup>1</sup> Aszód (*CIA.*, 1877, ii, p. 168).

<sup>2</sup> Zagyvápálfalva (*AE.* xl, p. 66).

<sup>3</sup> Egyek (*Jelentés Debrecen 1909 évi*, p. 39).

<sup>4</sup> Felső Kubin, *MAGW.* xiv (1884), p. 198.

<sup>5</sup> Mohi Puszta (M. Košice).

<sup>6</sup> *AE.* xl, p. 68.

<sup>7</sup> *MAGW.* xiii, p. 68.

<sup>8</sup> e.g. pins D<sub>8</sub> at Forró (Hampel, pl.

CLXII), B<sub>7</sub> at Sajó Gömör (Hampel, pl. cxiv) and Salgótarján (*ibid.* LII), pendants like B<sub>4</sub> at Tökés (Bereg) and Debrecen (*Jelentés Debrecen 1926 évi*, pl. v), &c.

<sup>9</sup> The date is given by the swords of types B<sub>3</sub> and A<sub>4</sub> found with them at Aranyos (Borsod, Hampel, pl. ccxvi) and Pírcse (Szabolcs, *ibid.*, pl. cxcii) respectively.

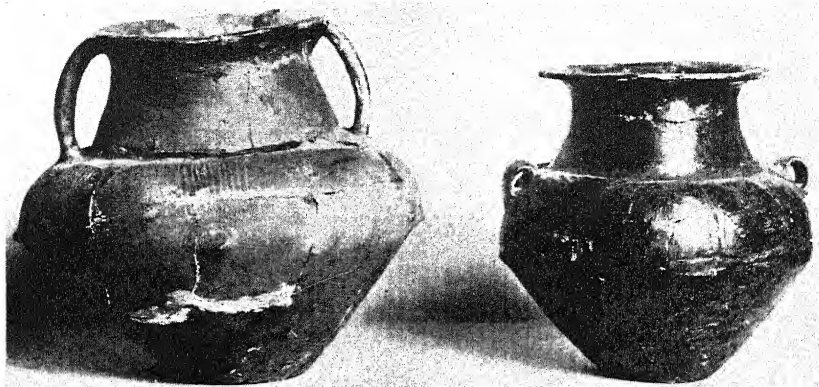


FIG. 206. Urns from Zagypálfalva. A M. Nemzeti Múzeum



FIG. 207. Dishes from Zagypálfalva. A M. Nemzeti Múzeum



Fig. 208. Gold cup from Angyalföld. British Museum.  $\frac{1}{12}$





Pilin, Tiszaföldvár, Felső Kubin, &c.<sup>1</sup> The socketed celt<sup>2</sup> now becomes the characteristic implement in North Hungary as in the Lausitz province. Sickles of the Italian and button types are common. Razors were manufactured at Pilin,<sup>3</sup> some conforming to the *terremare* type (Plate 5, B2), others copying the later Benacci II crescent.

Razors

The battle-axe, the favourite weapon of North Hungary in the Middle Bronze Age, disappears almost as completely as the shaft-hole working axe;<sup>4</sup> its place is taken by slashing swords. The bronze hilted series begins with foreign types appearing already in Period VI: B3 from Forró in Abauj,<sup>5</sup> B4 from Buzita in Abauj,<sup>6</sup> Aranyos in Borsod,<sup>7</sup> the Danube at Pest<sup>8</sup> and B4a from Buzita, Piricse,<sup>9</sup> &c. From these foreign types developed local forms even before the end of Period VI. In B5 the grip is encircled with ribs representing binding thongs, and there is a nick high up in the blade to prevent the sword shaking out of the scabbard. The swelling blade seems inspired by a reminiscence of the old short sword illustrated at Hajdu Sámson. The new native Hungarian product was, as we saw,<sup>10</sup> already being imported into the Tyrol, Switzerland, and Wurtemberg in phase E of the Late Bronze Age; there is an example even from Upper Italy.<sup>11</sup> Another local type found in hoards with the foregoing, but possibly outliving it, has a saucer-shaped pommel. It, too, was exported widely, but especially to Galicia,<sup>12</sup> where B5 also occurs frequently.

Swords:  
Foreign  
typesNative  
develop-  
ments

Side by side with the foregoing and, as far as the closed finds allow us to judge, first in company with the foreign types at Aranyos,<sup>13</sup> appear swords of series C. These must, therefore, rank in the first place as intruders;<sup>14</sup> but they underwent a local development on the same lines as the bronze-hilted weapons. Finally, we may note a single antennae sword from Felka in county Spis (Szepes, Slovakia),<sup>15</sup> and a rapier of type A3 from Rima-Szombat.<sup>16</sup>

Series C

<sup>1</sup> Hampel, pls. III and IV; *AE*. ii, p. 279.

<sup>2</sup> There is a palstav of North German form from Pilin (*ZfE*. xxiv, p. (573); xxxvii, p. 810), but the Italian winged types are unrepresented.

<sup>3</sup> Hampel, pl. xvii.

<sup>4</sup> There is a late specimen of this period from Felső-Balogh (Gömör); Hampel, pl. xciv, 7.

<sup>5</sup> Hampel, pl. clxii.

<sup>6</sup> *Ibid.*, pl. xxi, 5.

<sup>7</sup> *Ibid.*, pl. ccxvi, 5.

<sup>8</sup> *Ibid.*, pl. cxcvii, 5.

<sup>9</sup> *Ibid.*, pl. cxcii.

<sup>10</sup> p. 351, above.

<sup>11</sup> Randall-MacIver, *Iron Age*, pl. xvii, 12 (Comacine area).

<sup>12</sup> *Przeg A.* ii, pp. 11 ff.

<sup>13</sup> Hampel, pl. ccxvi.

<sup>14</sup> Despite the arguments advanced by Peake, *Bronze Age*, p. 88.

<sup>15</sup> *AE*. xxxi (1911), p. 344.

<sup>16</sup> Hampel, pl. cxiii.

*Spear-heads* After the sword the most important item in the warrior's equipment was the spear. These have now lanceolate or rhomboid blades in contradistinction to the Middle Bronze Age leaf-shaped type.<sup>1</sup>

*Mace* Finally, a distinctive North Hungarian weapon was the little mace of Pl. 15, 2 that may result from a lingering affection for the battle-axe. It is common in hoards from the beginning of Period VI, and was exported to Bohemia<sup>2</sup> and Carniola.<sup>3</sup>

*Ornaments* In addition to ornaments found in graves, we may mention in particular the coil shown in the middle row of Fig. 209.<sup>4</sup> The type is commonest in North Hungary, where it appears already in the early hoard of Forró,<sup>5</sup> but it was exported to Western Hungary and the Banat. The same hoard and others show that cylinders were still being worn throughout Period VI, but these were apparently longer and tighter than in Period V. In addition girdle plates of hammered bronze now appear. And among the pins a partiality for giant sizes<sup>6</sup> is noticeable as in contemporary deposits of Wurtemberg. Among the beads, the gold specimens from Angyalföld<sup>7</sup> found with the cup of Fig. 208, deserve notice; they illustrate the same four-pointed star that we noticed in faience in Period V. But now the rays are wrinkled like the pottery warts, as in the similar glass beads from Croatian cemeteries of Period VII. The same hoard contained a small pendant in the shape of a broad-tailed bird of bronze sheathed in gold leaf ornamented with stamped circles.

*Fibulae* The development of big pins was, however, checked by the adoption of the fibula during Period VI. Though no brooches are found in tombs, North Hungary in the Late Bronze Age becomes definitely a fibula province.<sup>8</sup> The local series begins with A1 found on the western edge of the province at Haidehof Pusztá (Mosony). From this an independent local series develops parallel to the harp and spectacle types farther west and keeps the exaggerated spiral catch-plate throughout. But A3 was perhaps introduced from the head of the Adriatic,<sup>9</sup> since there are specimens also in West

<sup>1</sup> Hampel, pl. ccxvii.

<sup>2</sup> Repeč, cf. p. 345 above.

<sup>3</sup> Jurkendorf near Rudolfswerth, M. Laibach, no. 3373.

<sup>4</sup> There is a miniature one from Pilin.

<sup>5</sup> Hampel, pl. clxii.

<sup>6</sup> e.g. Sajó-Gömör, Hampel, cxiv; Salgó-Tarján, *ibid.*, pl. lvi.

<sup>7</sup> *AE*. xlii (1928), p. 58, 11.

<sup>8</sup> The Hungarian fibulae are discussed

by Márton, *AE*. xxxi (1911), pp. 333 ff.; xxxiii, pp. 145 ff., 195 ff., and 328 ff. The following summary is based on his articles.

<sup>9</sup> Its prototypes are found in Submycenaean tombs on Kephallenia (Blinkenberg, fig. 136) and in the Late Bronze Age hoard of Tolfa in Central Italy (Randall-MacIver, *Villanovans*, pl. 18, 3).

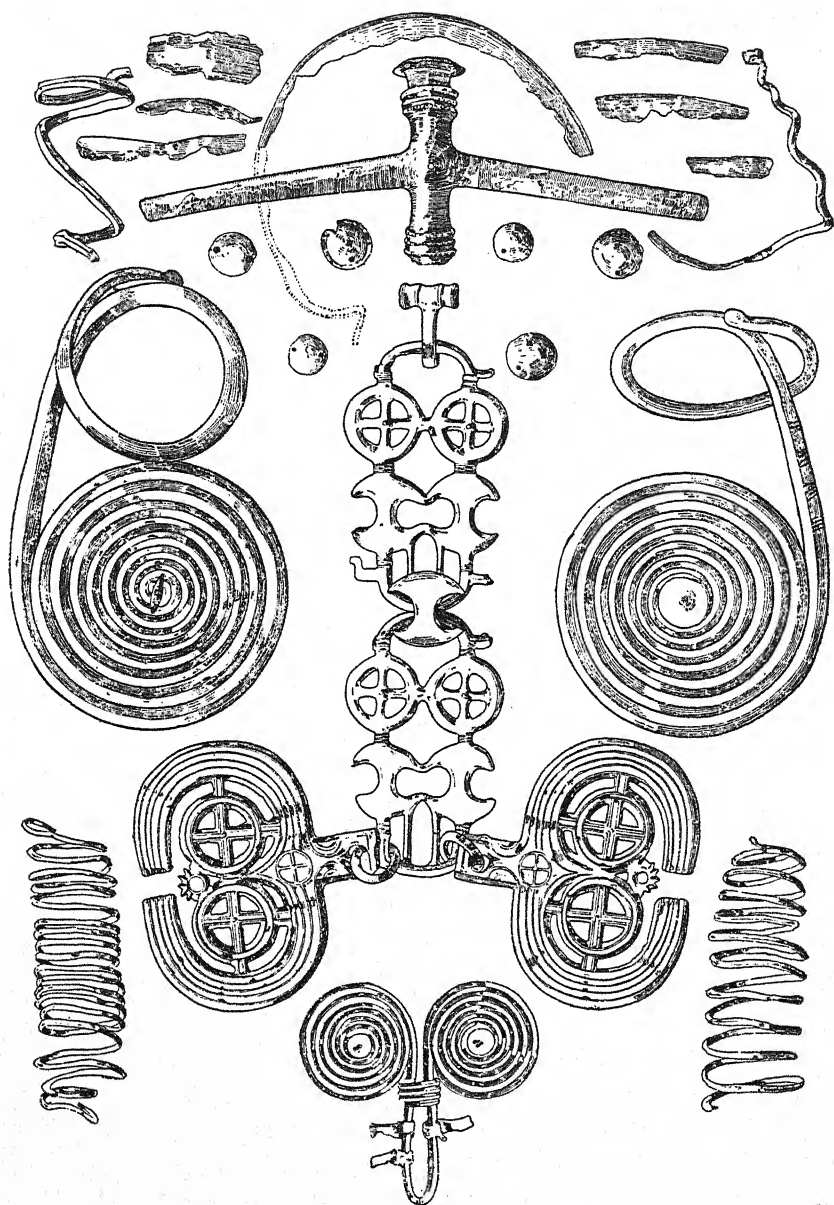


FIG. 209. Hoard of Rima-Szombat, after Hampel.  $\frac{1}{4}$

Hungary.<sup>1</sup> In any case it took root in North Hungary, where it occurs at Szt. Endre, Pilin, Aszód, and Debrecen.<sup>2</sup> It gave birth to the variant A6, perhaps under the influence of the two-membered type B3a, since it is commonest in the area where the Lausitz influence was strongest<sup>3</sup> and where stray specimens of B3a are actually found.<sup>4</sup> It was exported to Bohemia, there to occur in urnfields of Silesian or, more probably, Plátenice type.<sup>5</sup>

Still later, belonging exclusively to Period VII, appears the composite variant A5 that is only at home in North Hungary and Slovakia.<sup>6</sup> Thence it was exported to West Hungary,<sup>7</sup> Moravia, and Bohemia,<sup>8</sup> Transylvania, and even Moldavia.<sup>9</sup>



FIG. 210. Bronze cups from second hoard of Hajdu Sámson.  $\frac{1}{2}$

Its association at Kurd with Italian cordoned buckets shows the relative lateness of the type.

Foreign fibulae are seldom found in North Hungary in Periods VI or VII; A" 2a is found at Aszód.<sup>10</sup> There are also a few spectacle brooches from Aszód, and from Slovakia,<sup>11</sup> and the fibula found with foreign goldwork at Fokorú in County Heves belonging to type A" 4.

*Horse-trappings*

Bronze bits are not found in our area, but elaborate compound pendants that appear in hoards near the end of Period

<sup>1</sup> Kesthely, Regöly (Tolna), Velem, and Tethen (Győr).

<sup>2</sup> *Jelentés Debrecen 1926 évi*, pl. v.

<sup>3</sup> Pilin, Kisterenne, Debrecen, Miskolcs, Madacska (Nograd), Dominik (Hont), and Velem.

<sup>4</sup> Hampel, pl. xxxix, 2-3.

<sup>5</sup> Pic, iii, pl. xiv; Schárníl, *Böhmen*, pl. xli, 25.

<sup>6</sup> Bodrogkeresztur, Debrecen, Aszód, Kisterenne, Alpar (Pest), Dolyán, and Marczal (Nograd), Bohuslavice, and

Puchó (Trencen), Sajó-Gömör, Komjáth (Liptó), Medvedze (Arva), Felka (Spis).

<sup>7</sup> Velem, Kurd (Tolna), Orcsi, and Török-Koppány (Somogy), Uszavölgy (Zala).

<sup>8</sup> *ZfE*, xlv, p. 681; Schárníl, *Böhmen*, p. 196.

<sup>9</sup> Parvan, *Getica*, pl. xix, and fig. 307.

<sup>10</sup> *AE*, xxxiii, pl. viii, figs. 46-7.

<sup>11</sup> *AE*, xxxi, p. 351.

VI (e.g. at Rima-Szombat, Fig. 209) are generally interpreted as horse-trappings. And from Zsujta (Abauj) comes a bird-shaped top from a chariot-pole that can be little if any later.<sup>1</sup> Another chariot part comes from the depot of Komjáth that belongs definitely to Period VII. It is therefore clear that the people of North Hungary drove, even if they did not ride. They must have controlled their steeds with bone-ended bits as in Period V.

Metal vessels are very common: we have both smooth<sup>2</sup> and *Metal* bossed<sup>3</sup> cups of hammered bronze (Fig. 210) and similar *cups*



FIG. 211. Cauldron with T-handles from Hajdu Sámson.  $\frac{1}{2}$

shapes in gold (Fig. 208) that belong in part to Period VI. Especially on the eastern frontier of the province many large vessels are found: cauldrons with twisted handles fitting into loops that are attached to T-pieces (Fig. 211) are represented in no less than five hoards just across the Tisza.<sup>4</sup> Big buckets decorated with circles flanked by birds' heads in repoussé<sup>5</sup> (Fig. 212) are found at three sites in the same area.

*Cauldrons  
and  
buckets*

All this beaten bronze ware is usually called Italian, but, as we have noted, doubts have been cast on the Italian origin of

*The  
bronze  
ware  
local*

<sup>1</sup> Cf. Svijan in Bohemia, Richly, pl. xxxviii, and Hader in Lower Bavaria (Reinecke in *Verh. Hist. Vereines f. Niederbayern*, xli (1905), p. 344).

<sup>2</sup> Hajdu Sámson, Csikszentkirály, Bodrogkeresztur.

<sup>3</sup> Hajdu Sámson, Hajdu Börsömeny,

Aszód, Breznobanya (Zvolen) (Hampel, pls. LXIV-LXV; *Man*, xxvi. 84).

<sup>4</sup> Hajdu Börsömeny, Hajdu Sámson, Rohod, Maria Pöcs, and Kantorjános (Szabolcs Varmegye, p. 9).

<sup>5</sup> Hajdu Börsömeny, Sennyő, and Szennyeszpuszta.

the smooth cups and the T-cauldrons. Moreover, it would be manifestly absurd to contend that the gold cups from Angyal-föld (Fig. 208) were made in Italy. On the other hand, North Hungary would be a convenient centre for their diffusion. Thus the T-cauldrons are found in Galicia, where undeniably North Hungarian swords are common, and in Transylvania<sup>1</sup> and West Hungary,<sup>2</sup> where fibulae of type A5 likewise occur. The smooth cups recur in the Ukraine.<sup>3</sup>

*Industry and trade* It was evident that the North Hungarian culture was definitely based on the exploitation of the copper ores in which the area it occupies is so rich. In the course of the foregoing analysis it will have become plain that North Hungary was also the home of a vigorous secondary industry. That is attested by the wealth and variety of original types as much as by the size of the workshops discovered at Pilin, Kisterenne, and Aszód. We can also detect evidence of industrial specialization. We find hoards composed exclusively of swords (Podhering, Zsujta) or of bronze vases (Hajdu Sámson). Naturally, therefore, not only metal but finished products of metallurgy were exported far and wide. We have seen that undeniably North Hungarian objects reached Carniola, North Italy, Switzerland, Wurtemberg, Galicia, and Moldavia. If we accept the buckets as Hungarian we can add North Germany.<sup>4</sup> The reflex of this trade is seen in the foreign objects that reached the industrial centres. Intercourse with the north brought amber to Gödöllő<sup>5</sup> and Pilin.<sup>6</sup> The eastern connexions brought the Scythian objects that herald the collapse of the Bronze Age civilization.

*Italy* From Italy came at least the fibulae of type A3, perhaps also A4. Later we find at Aggtelek pottery adorned with little bronze knobs as at Sta. Lucia and Éste.<sup>7</sup> And whether the buckets be Italian or no, the bird's head motive<sup>8</sup> adorning them is very common in the Peninsula, and must either have reached Hungary from there or from a short-lived intermediate centre east of the Adriatic. On the other hand, direct relations with the Aegean have ceased. The first Greek object to reach our area is the

*No contact with Aegean*

<sup>1</sup> Bardocs, Ördöngös Füzes, and Alba Gyula, Párvan, *op. cit.*, p. 309.

<sup>2</sup> Somlyó (Veszprem) Hampel, pl. LXVII; cf. *MAGW.* xv, p. 138 and pl. XII, 12 (Wies in Styria).

<sup>3</sup> Tallgren, *Pontide*, fig. 91.

<sup>4</sup> Parchim, *AuhV.* v, pl. 56, 1018.

<sup>5</sup> *CIA.*, 1877, ii, p. 166.

<sup>6</sup> Hampel, i, p. 20. He says 'Etruscan amber and glass beads'.

<sup>7</sup> *AE.* xxxiii, p. 155, n. 6. Cf. Randall-MacIver, *Iron Age*, pp. 14, 16, &c.

<sup>8</sup> It is supposed to represent the solar barque carried by swans, but is probably rooted in the last resort in the Sun cult as elaborated in the Hittite Empire and Phoenicia. On the trade-route see Roska, *Dolgozatok*, 1928, p. 254.



archaic hydria from Bene,<sup>1</sup> dated to the sixth century and introduced with the Scyths. Nevertheless the swords of type B5 are adorned with an early Mycenaean pulley-motive<sup>2</sup> which is also seen on bone plaques from Tiszafüred<sup>3</sup> and bone pommels from Tószeg D. Parallels from Vattina show that this pattern came up the Danube, but it must already have become naturalized in the Banat long before it was applied to Late Bronze Age swords in North Hungary. Possibly too the solid swans or ducks that appear perched on a mace flew up the Danube. The earliest European resting-place of this Asiatic bird was on the rim of a cup found in a submycenaean hoard at Tiryns.<sup>4</sup> But probably he winged his way thence up the Adriatic.

If many of the foreign types found in North Hungary were due to trade, that will not account for the abrupt appearance of a whole series of new tools and weapons at the beginning of our period. In particular the replacement of the neat shaft-hole axe by the socketed celt, a much inferior device, can only be explained in ethnic terms. And the general adoption of the sword instead of the battle-axe was scarcely less revolutionary. These changes in armament, like the sudden introduction of fluted decoration and a whole series of Lausitz forms in the pottery, were the symbols of an actual conquest of North Hungary by the Lausitz people. If old traditions survived, they were preserved at first by a subject population. The North Hungarian province of the Late Bronze Age belongs essentially to the north rather than the south. Yet the older elements asserted themselves more and more as time went on.

The chronology of the period is fixed both stratigraphically and typologically. The intrusive fluted ware appears in Tószeg D, and the same level contains bone pommels adorned with the same pulley-pattern as the swords of type B5. The oldest intrusive types that appear in bulk characterize the first half of the Late Bronze Age—Reinecke D—while the earlier North Hungarian exports (e.g. the mace from Řepeč) are found in deposits of the same phase in Bohemia. The development of the industry in the second phase is still better attested by finds of North Hungarian swords in the Hallstatt A deposits of Bavaria and Wurtemberg and by the strict parallelism between

*Invasion  
need to  
explain  
new  
forms*

*Chrono-  
logy*

<sup>1</sup> Párvan, pl. XVIII.

<sup>2</sup> Márton, *AE*. xxix (1909), p. 411.

<sup>3</sup> *AE*. xxv, p. 168.

<sup>4</sup> *Arch. Δελτ.*, 1916, παράρτημα, p. 16,

fig. 16.

One such bird in bronze overlaid with gold leaf forms part of the Angyalföld hoard.

North Hungarian and Benacci I bronze work. The conjunction of a fibula of type A5 with cordoned buckets at Kurd suffices to prove that the North Hungarian Bronze Age outlasted Period VI. But the total absence of mature Benacci II or Arnoaldi types east of the Danube—there are plenty beyond the river—warns us against allowing too long a life to the Bronze Age. In fact, by the seventh century North Hungary was orientated to the east.<sup>1</sup> If the Scyths had not yet annexed the plain, their incursions had probably already ruined the settlements in the east of the province. Hence the Late Bronze Age in North Hungary would begin about 1100 B.C. and last till 700 B.C. or a little later.

## II. EAST HUNGARIAN GROUP II

In the D levels of the frontier site of Tószeg we find the intrusive fluted ware mixed with the native stippled fabric and two others that are found pure in settlements and urnfields beyond the Tisza and on the steppe tracts of Hajdu County. A new cultural province begins there, distinguished both by its bronzes and its pottery from group I, and extending roughly from Munkacs (Munkačevo) in Subcarpathian Ruthenia to the Maros. The most important sites are Mojgrad, Berettyó Újfalu,<sup>2</sup> Bihar,<sup>3</sup> Szelevény, and the 'Lopos Halom' near Gyulavarsánd,<sup>4</sup> together with the urnfield of Pusztta Szent János west of Grosswerdein.<sup>5</sup>

In this area also we have settlements, cemeteries, and hoards. The settlements are very like those of Period V, but in some cases at least, e.g. at Bihar, show a more specialized industrial character reminiscent of Pilin. As to the cemeteries, nothing can be said in default of detailed reports of any excavation. We can only describe the pottery and the artifacts found in the various types of deposits.

*Pottery* The distinctive pottery, represented by two main fabrics, is definitely metallic both in form and ornament. The forms include large urns, dishes like those from Tószeg C, and various cups and jugs with or without feet, approximations to which already appear in Tószeg C. The rims of the cups often slope away to the handle as in the wares of Period III from the same

<sup>1</sup> Cf. Párvan, *Getica*, pp. 384 and 770.

<sup>2</sup> The material in question comes from a layer above the settlement of Danubian II and separated from it by

a sterile layer.

<sup>3</sup> Hampel, pl. LXXII, 2-3, 5.

<sup>4</sup> *AE.* xxviii (1908), pp. 55 f.

<sup>5</sup> Hampel, pls. LXXV-LXXVI.

region.<sup>1</sup> The first ware, which we may name after the site of Puszta Szt. János, is ornamented with flutings bordered by incised or dotted lines twisting round small warts to form a series of horizontal S spirals (Fig. 213 b). This ware, found at all the sites mentioned above, was exported to Aszód and Vattina. In Tószeg C we can already perceive hints of a transition from typical wart-ware to the Puszta Szent János style. Its metallic origin is shown by a hollow gold disk or saucer, 8.7 cm. wide, found at Gyulavarsánd, that is decorated with exactly the same pattern.<sup>2</sup> Reinecke notes the resemblance to the designs on swords of type B<sub>4</sub>.

*Puszta  
Szt.  
János  
ware*

*Metal  
prototypes*

In the second ware, best represented at Berettyó Újfalú, the designs are incised and cross-hatched, and consist for the most part of hanging pot-hook spirals (Fig. 214 b). Finally, fluted ware occurs sporadically at most sites.

The settlements have yielded plentiful bone and horn implements, especially hollow harpoon-tips, and even stone celts. Among the bronzes socketed celts are not very common, and occur principally in late hoards and often in the peculiar East Hungarian variant.<sup>3</sup> We miss altogether the razors and tweezers so popular farther north, though sickles of Italian type are plentiful.

*Celts*

*No  
razors*

So too swords are rare and late. The battle-axe with a spiked butt seems to have remained the favourite weapon east of the Tisza (Fig. 148d).<sup>4</sup> The spear-heads often preserve the old-fashioned leaf-shaped blade as against the new form introduced into North Hungary.

*Battle-  
axes*

Fibulae were not worn in the area occupied by group II, and the pins are not very distinctive. The most typical ornament was a solid or hollow penannular bracelet with triangular cross-section. Some of the gold ornaments described below, in particular bracelets like Fig. 224, e.g., may well have been made by the authors of group II culture, since the majority have been found within its domain; they can, however, be more conveniently described at a later stage.

*No  
fibulae*

*Gold  
bracelets*

The culture just reviewed seems to be largely due to the battle-axe folk of the Middle Bronze Age groups 1 and 5, driven eastward by the Lausitz invasion. For a substantial

*Origin*

<sup>1</sup> p. 290, above.

<sup>2</sup> *AE.* xxviii, p. 76, fig. VII: found, according to Domonkos, in the cemetery where most of the graves were medieval (*ibid.*, p. 61).

<sup>3</sup> Hampel, pls. cxxii, cc, ccvi,

ccxxvi, &c.

<sup>4</sup> Twenty such axes with four North Hungarian maces and a single-bladed axe of Agathyrasian type were included in the hoard of Domahida (Szatmar, Hampel, pl. ccxxiii).

infusion of the invaders themselves there is no evidence; group II preserves native traditions in contradistinction to group I. On the other hand, one may suspect here a substratum of folk who had been long settled on the western slopes of the Transylvanian mountains. In the pottery we have noted reminiscences of local neolithic forms. Moreover, in Northern Transylvania some remarkable cremation graves have been discovered that may disclose the prototypes of some Puszta Szt. János motifs. The cemetery at Gernyeszeg produced a multitude of vases adorned with scrolls, plant motifs, and other patterns in high relief as if carved (Figs. 215, 216).<sup>1</sup> The only guide to the date of the graves is a flat celt of copper. Pending a full publication, we can only suggest that they may illustrate the survival in Western Transylvania of the neolithic spiral patterns that reappear in Puszta Szt. János and Berettyó Újfalu.

*Gernyeszeg*

*Chronology*

The life of group II cannot yet be accurately delimited. It begins already in Period VI as the finds of characteristic pottery in Tószeg D attest, but no lower limit is available. Round Grosswerdein there are one or two graves containing objects of a Hallstatt character that may denote an incursion of horsemen from beyond the Danube, and there are also intrusive Scythian barrows as far south as Békés. At the same time it must be remembered that much of East Hungary would have become almost uninhabitable by reason of inundations when the wet Subatlantic epoch set in, while the area would decline in importance with the intensive exploitation of the inner Transylvanian deposits of gold that began about this time. So we may suppose that the change in the weather, combined with the depredations of nomads, would have put an end to the culture of group II before 600 B.C.; the thinness of the deposit at Tószeg implies an even shorter life for the D settlement there.

### III. GROUP III

*Continuity with Period V*

South of the Maros the Pécska-Vattina culture continues. The evidence of the pottery from Pécska leaves no doubt as to the continuity of culture, and the stratification there allows of the recognition of at least two phases. At the same time the occurrence of fluted ware and even some Lausitz forms shows that the northern invaders, if they did not settle in the Banat, at least affected the course of cultural development. Moreover,

<sup>1</sup> The vase here shown is said to come from Tiszafüred, but is quite in the style of Gernyeszeg.

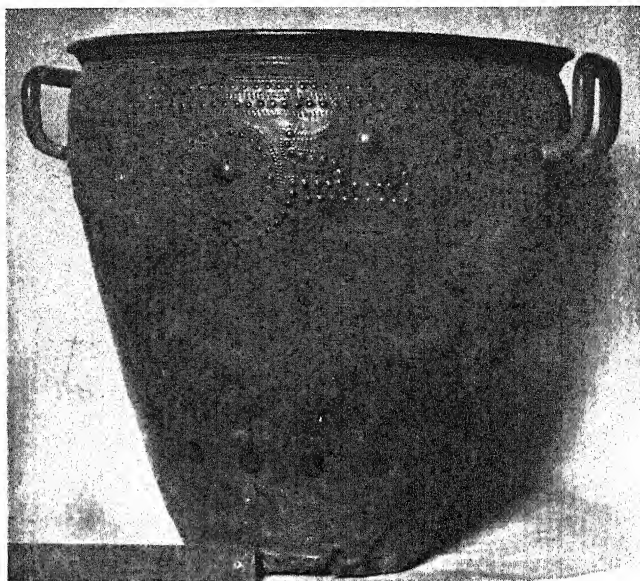


FIG. 212. Bronze bucket from Szennyespusztá.  
M. Debrecen.  $\frac{1}{3}$

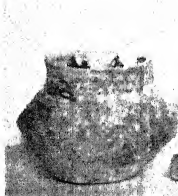


*a*



*b*

FIG. 213. Pottery from Tószeg D



*a*



*b*



*c*

FIG. 214. Pottery from Bronze Age settlement at Berettyó Újfalu



the domain of the Vattina culture was extended. Pure Pécska D types characterize the urnfield of Kiskőrös<sup>1</sup> and reappear in bulk beyond the Danube at Gerjen. This extension may mark a new trade route controlled from the Banat, replacing

*Extension  
westward*



FIG. 215. Cups from Gernyeszeg.

the old 1-4-3 route of Period V that had been disorganized by the invasion.

Southward the Vattina culture absorbs the allied Kličevac group and, in the later phase (E) at least, plentiful Pécska E types are found also at Surčin in Syrmia and even as far west as Vukovar—perhaps they indicate a reoccupation from the

*Extension  
to Serbia  
and  
Syrmia*

<sup>1</sup> *AE.* xxxii, p. 281.



Banat of an area wasted by raids at the beginning of Period VI. Northward the occurrence of similar types at Szelevény<sup>1</sup> may denote an advance up the Tisza into the territory of group II.

*Burial rites* In the character of the settlements and the burial rites no change can be discerned since Period VI, save that at Vattina the later graves contain fewer bronzes and more pots. Still, according to Wosinski,<sup>2</sup> the graves of this phase at Gerjen contained extended skeletons. For the definition of the culture of this epoch and its distinction from earlier phases we must rely on the pottery.

*Pottery metallic forms* The pot forms from the D levels at Pécska and the poorer cemeteries at Vattina<sup>3</sup> are intensely metallic (Figs. 217-19). None the less the commonest shapes are clearly enough descended from the Perjámos jug; they are cups and jars with one or two handles rising above the rim; already the mouth is often constricted where the handles are attached.<sup>4</sup> At the junction<sup>5</sup> of handle and rim there is regularly a V-shaped depression (a sort of *ansa lunata*) or, alternatively, the clay is pinched up to form a little pillar (a sort of *ansa cylindroretta*). Notable is the break in the curve of the high-swung handles at Vattina.

*'Metallic' patterns* The texture of the pottery is fine, its surface, black and polished, is no less metallic than the forms and even the ornament has been influenced by the art of the smith. At Vattina and Omoljica a favourite motive is a little  $\Lambda$ , a pattern that recurs on the gold disks from Ottlaka, on the bracelets from Bellye (Fig. 224, f.), and on Hallstatt girdle plates,<sup>6</sup> but appeared already on Kličevac ware and axes of type A2.<sup>7</sup> A more widely distributed motive is the rosette consisting of a dimple surrounded with a ring of dots.<sup>8</sup> The same motive was very popular in transitional deposits in Italy,<sup>9</sup> but in East Central Europe marks the developed phase of the Early Iron Age.<sup>10</sup> In the Banat it seems a natural development of the earlier

<sup>1</sup> Hampel, pl. LXXXVIII, 1-2.

<sup>2</sup> *Ink. Ker.*, pp. 51 and 64.

<sup>3</sup> Milleker, *Vattina*, p. 61 and plates XIV, 5-6; XVI, 1-4.

<sup>4</sup> *Dolgozatok*, fig. 45; cf. Wosinski, *TT.*, pl. cv, 4 (and also pl. civ, 1-3).

<sup>5</sup> Perjámos, Vattina, Omoljica, Gerjen.

<sup>6</sup> *AuhV.* v.; cf. also *SV.* viii, pl. iv. 4.

<sup>7</sup> *Starinar*, 1906, fig. 5.

<sup>8</sup> *Vattina*, pl. XVIII, 2; Gerjen, *TT.*, pl. cv, 5. Szelevény, Hampel, pl. LXXXVIII, 1-2 (Aszód, *ibid.*); but cf. Wosinski, *Ink. Ker.*, pl. xcii, where the same

motive is seen on a figure of apparently Middle Bronze Age type from Temes Kubin.

<sup>9</sup> Pianello, *BP.* xxxix, pl. III, 7; Allumiere, MacIver, *Villanovans*, pl. 18, 13, 18.

<sup>10</sup> e.g. in Silesian urnfields of Seger's phase D (*SV.* viii, pl. iv, 11), and in Hallstatt C barrows (*AuhV.* v, p. 403, fig. 2). Cf. the gold plaques from Chauchitsa in Macedonia, Casson, *Macedonia*, fig. 53.

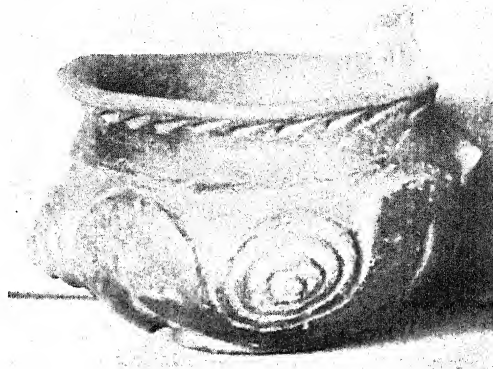


FIG. 216. Vase said to come from Tiszafüred. M. Košice



FIG. 217. Vase from Pécska D. M. Arad

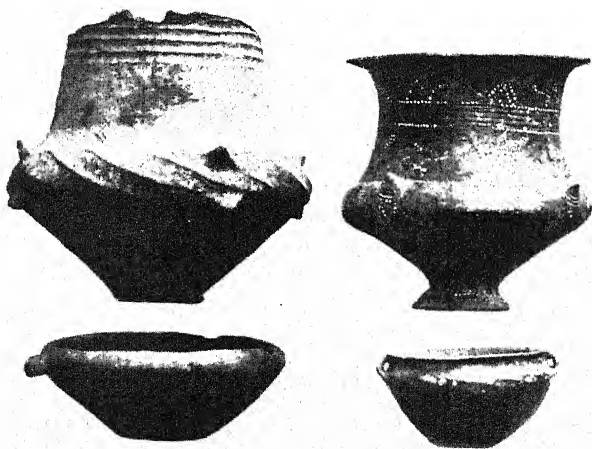


FIG. 218. Urns and covering dishes from Dubovac.  
M. Vršac



concentric circles. Besides these patterns we find a very metallic-looking ribbed ware, perhaps influenced by the Lau-sitz intrusion, and a specialized wart ornament in which the warts are grooved, giving them a wrinkled look.<sup>1</sup>

To turn now to the urns, we find that at Vattina jugs<sup>2</sup> were sometimes used as ossuaries. From this site, from Dubovac, from Surčin and elsewhere,<sup>3</sup> come further several big black urns of 'Villanova' shape decorated with oblique shoulder

*Villanova  
urns*



FIG. 219. Pottery from Vattina.  $\frac{1}{2}$

flutings and warts (Fig. 218). At Dubovac the later urns are relatively small and often approximate to Villanovan shapes. But nothing prevents either type being regarded as descended from the native Vršac and Kličevac forms.

In the E levels of Pécska a certain decline is observable. The leading type is a descendant of the old Perjámos jug that now has a constricted mouth. Precise parallels are lacking at Vattina, but several identical jugs have been found in Syrmia (Fig. 221). Some of the 'Villanova' urns from Dubovac that cannot be matched at Vattina may belong to the same late phase.

*Pécska E  
wares*

<sup>1</sup> *Vattina*, pl. xvi, 2; Gerjen, *TT.*, pl. civ, I; Dubovac, Wosinski, *Ink. Ker.*, pl. xcvi, 3 and 5. <sup>2</sup> *Vattina*, pl. xviii, 2. <sup>3</sup> *Ibid.*, p. 34.

*Axes* The late bronze industry of the Banat is not well known. Moulds found *in situ* in Pécska D and even in E<sup>1</sup> show that flat chisels and shaft-hole axes were still being manufactured here even after the end of Period VI. Socketed celts are found stray or in hoards,<sup>2</sup> and a mould for their local manufacture was picked up at Kurvin Grad in North Serbia.<sup>3</sup> On the other hand, even in Pécska D, men were casting spear-heads with rhomboid blades as at Aranyos.<sup>4</sup> In the late hoards we find

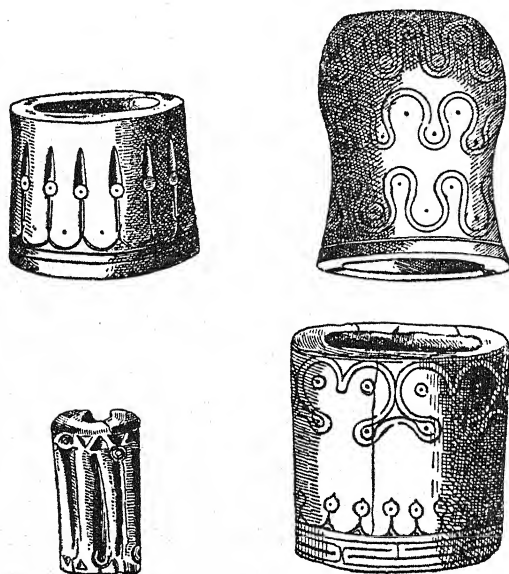


FIG. 220. Engraved bone cylinders and pommel from Vattina.  $\frac{2}{3}$

further a curious knife-dagger with leaf-shaped blade to which the best parallels come from South Russia.<sup>5</sup> In the whole area there is not a single sword of series B-C.<sup>6</sup>

It is quite likely that horn, bone, and even stone were still used for tools. Among the bone products some disks and pommels deserve special mention. On one we see the same 'pulley' motive that we meet at Tószeg D, on North Hungarian bronze swords and in the Shaft Graves of Mycenae. Another (Fig. 220) is engraved with a pattern resembling that on the gold bracelet from Pipea<sup>7</sup> to be mentioned below.

<sup>1</sup> Dolgozatok, iii, figs. 55, 56, and 67.

<sup>2</sup> Hampel, pl. cxxvi, 1; Milleker, *Delmagyarország*, 1891, pp. 10-12.

<sup>3</sup> *Starinar*, 1910, pl. III, 12.

<sup>4</sup> Dolgozatok, iii, fig. 57.

<sup>5</sup> Tallgren, *Pontide*, fig. 109, 11.

<sup>6</sup> Hampel, iii, pp. 82, 102.

<sup>7</sup> Pârvan, *Getica*, fig. 231, 4.

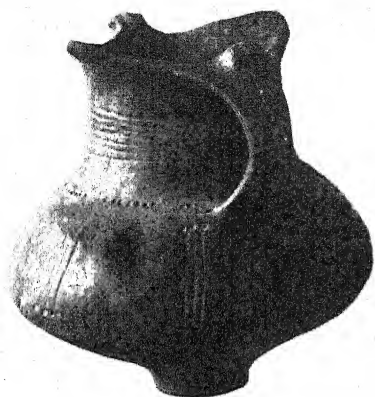


FIG. 221. Amphorae from Surčin. M. Zagreb

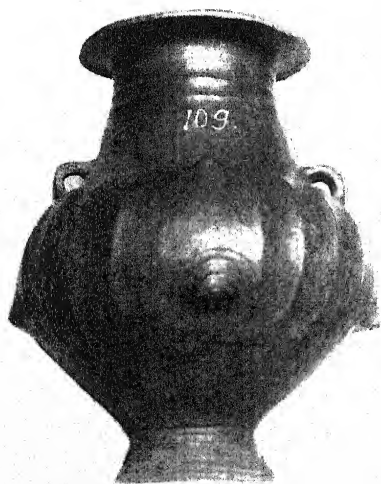


FIG. 222. Large urn (graphited) from Pécska. M. Arad

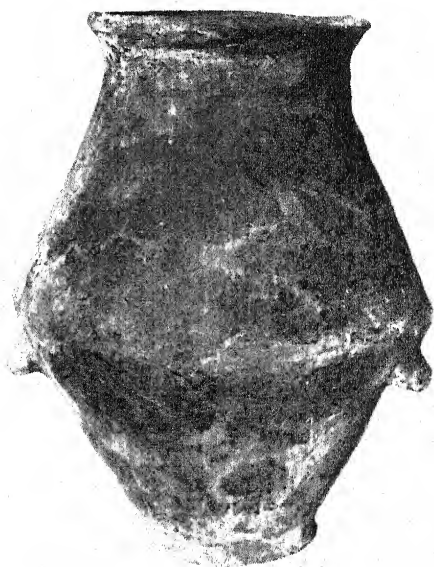


FIG. 223. Urn from Scythian grave, Maros Gombos. M. Clausenburg





As far as the Banat is concerned, no safety pins nor other types of the Western Iron Age—Villanova and Hallstatt—have been found. On the other hand, certain types of gold object, well represented in our area, are elsewhere associated with objects demonstrably belonging to Period VII. At Féregyháza a hoard of gold bracelets<sup>1</sup> was discovered. Some agree in shape with the Middle Bronze Age type D<sub>1</sub>, while others end in a pair of spirals like Fig. 224 d (D<sub>1a</sub>). Now a bracelet of the latter

*Absence of Hallstatt forms*

*Gold ornaments Bracelets*

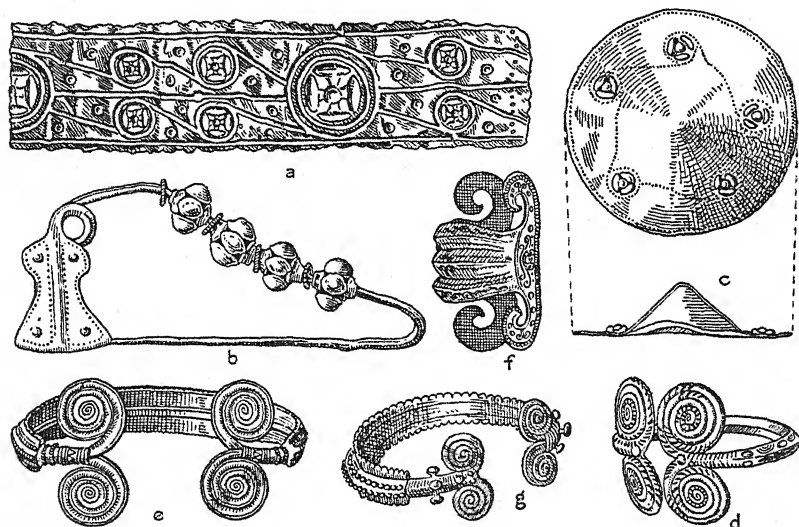


FIG. 224. Gold ornaments of the late Bronze Age: a-d Fokorú, e Szilágy-Somlyó, f Belliye, g Acsád

type was found in a hoard at Fokorú in North Hungary associated with a fibula and other gold objects that must belong to Period VII and not its earliest phase (Fig. 224, b-d). On the strength of this find Márton,<sup>2</sup> followed by Pârvan<sup>3</sup> and most other authorities, assigns the Féregyháza hoard to the Hallstatt period; Ebert,<sup>4</sup> on the contrary, insisting on Middle Bronze Age parallels, dates it much earlier. We think that the hoard in question may well belong to Period VI. In the double-ended bracelet D<sub>1a</sub> we see the prototype of the forms shown in Fig. 224, e, f, and g. The first of these types, represented by two or three specimens in the area of group II,<sup>5</sup> has parallels in Scan-

<sup>1</sup> *AE.* xxvii, p. 59.

<sup>2</sup> *AE.* xxvii, l. c.

<sup>3</sup> *Getica*, p. 325.

<sup>4</sup> *Jahresh. Ö. a. Inst.*, 1908, p. 274.

<sup>5</sup> The Féregyháza types are also represented in this area by a hoard from Ófehértó in Szabolcs County, *AE.* xl, p. 244.

dinavia that may belong to the border between Periods VI and VII.<sup>1</sup> Type g is Transylvanian in origin, where intermediate forms are also found,<sup>2</sup> and belongs to the end of the Hallstatt period.<sup>3</sup>

*Disks* The same difficulties impede the dating of the gold disks from Ottlaka<sup>4</sup> just on the border between groups II and III. The patterns of loops and spirals and the delicate punctured work are reminiscent of the finest Bijelo brdo ware, but carry on a tradition, going back to Mochlos and Troy, that had been implanted in Hungary in Period IV. On the other hand, the hunting scene, Fig. 225, reminds us of Ödenburg and Hallstatt C bronzes; Hoernes indeed calls it a barbarized Venetic style.<sup>5</sup> Another disk from the same hoard depicts four distinctive Hallstatt birds.<sup>6</sup> The assignment of the disks to Period VII therefore seems inevitable, though the date implied by Hoernes' dictum is perhaps unnecessarily late.

*Chronology* The dating of the civilization just described reopens in an acute form the problem broached on p. 291. Does the later Pécska and Vattina material fill in the period 800-400 B.C., or should it be dated three hundred years early and a partial evacuation of the Banat after 700 B.C. postulated? In the Subatlantic epoch the Banat would have been ill adapted for intensive settlement; and by the sixth century the establishment of a new short route to the Black Sea and the Aegean, controlled by the Scyths,<sup>7</sup> would have robbed the Banat settlements of their *raison d'être*. An abandonment of the sites, therefore, is *a priori* quite likely. The absence from the Banat of Italian and Illyrian types of Period VII, when Illyrian culture had already advanced to the mouth of the Drave,<sup>8</sup> would seem to imply such an exodus, especially as the types in question are found on the Maros. And the striking correspondence between late Vattina wares and the pottery of the barbarian squatters in Troy VIIa<sup>9</sup> may indicate whither the Banat's inhabitants retreated. So the proposition that the later Vattina culture (Pécska D) lasts from 1100 to 800 B.C. and Pécska E from 800 to 500 B.C., the Banat being then almost deserted,<sup>10</sup> is not indefensible. The so-called Villanovan types would then

<sup>1</sup> Cf. Montelius, *Minnen*, 1134-5.

<sup>2</sup> Pärvan, *Getica*, p. 326.

<sup>3</sup> Cf. Reinecke, *Germania*, 1925, p. 53.

<sup>4</sup> *AE*. xxix (1909), pp. 405 f.

<sup>5</sup> *Urgeschichte*, p. 550.

<sup>6</sup> *AE*. xxix, fig. 4.

<sup>7</sup> p. 397, below.

<sup>8</sup> p. 407 below.

<sup>9</sup> Cf. p. 392, below.

<sup>10</sup> Historical parallels are not lacking; the intensive colonization of the Banat is a modern event beginning with the expulsion of the Turks.

be derived, not from Italy, but from the assumed proto-Villanovan culture of Bijelo brdo.

But can such a gap really be admitted? It implies a considerable telescoping in the upper strata at Vinča. And in the Banat itself, if Hallstatt forms are absent, Scythian and even La Tène objects do occur, albeit in minimal quantity. Moreover, there are wheel-made vases from South Hungary, presumably belonging to the La Tène period<sup>1</sup> that undoubtedly

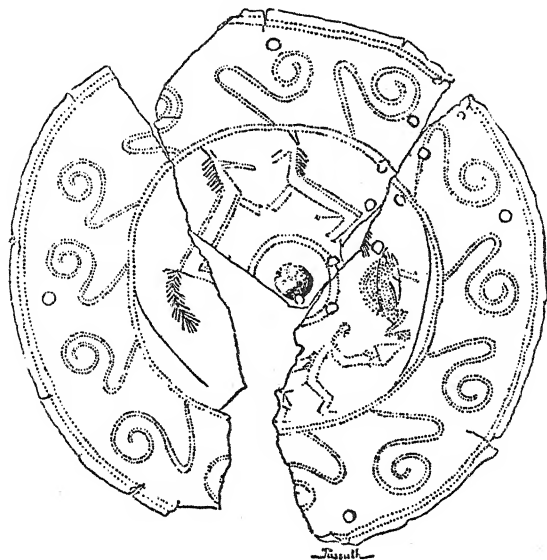


FIG 225. Gold disk from Ottlaka, County Arad.  $\frac{1}{2}$

carry on the Vattina tradition! So a more consistent record would be obtained by adopting the lower dates advocated by Milleker for the Vattina culture: its later phase (Pécska D-E) would last from 700 to 400, and the age of the earlier phase—and with it Bijelo brdo and all the Hungarian urnfields—would be correspondingly reduced. We therefore only adopt the higher dating provisionally till excavations at other stratified sites—of which there are plenty—have settled the issue.

#### IV. GROUP IV

On the Upper Maros, where connected remains assignable to the Middle Bronze Age are lacking, there are traces of urnfields belonging to Period VI-VII. These may denote an ex-

<sup>1</sup> In the University Museum, Cambridge.

tension eastward of the Vattina culture, though an admixture with aboriginal and eastern elements is likely.

*Urnfield elements in Transylvania* At Marosvásárhely one large urn of 'early Villanovan' shape, adorned with horizontal flutings, was found.<sup>1</sup> And from a disturbed urnfield at Mezőbánd come rough cups with one or two high swung handles and triple vases that recall Vattina types.<sup>2</sup> To the same native culture may belong a settlement near Schassberg. The only object from the site yet published is a clay hearth magnificently decorated with elaborate spirals.<sup>3</sup> Pârvan<sup>4</sup> compares the design to the famous sculptured spirals from Nesactium in Istria,<sup>5</sup> but in view of the long tradition of spiral decoration in Transylvania the appeal to influence from the Adriatic seems superfluous.

*Illyrian barrows* Nevertheless the urnfield folk were not the only ethnic element of western affinities in Transylvania. Under a barrow at Maros Csapó a knight's grave was discovered furnished with an iron bit<sup>6</sup> identical with those from Dálya, Kisköszeg, and Somlyó on the other side of the Danube (Fig. 227), and other horse-trappings of a Hallstatt character as well as with pottery said<sup>7</sup> to resemble that from Somlyó on the one hand, from local Scythian graves on the other.<sup>8</sup> This grave certainly denotes an incursion of people from the South Illyrian Hallstatt province up the Maros valley in pre-Scythian times. Perhaps it was they who introduced the Villanovan and South Illyrian forms found in the urnfields.

Besides the few closed finds just enumerated, a number of bronze and gold objects found stray or in hoards in Transylvania may be mentioned at this point; for they seem in fact to belong to Period VII and the end of Period VI. The majority are the products of a highly specialized local industry.

*Agathyr-sian axe* The socketed celt seems to have been early adopted and developed locally to a specialized type with a peaked rim. But the perforated axe served as the principal weapon, if not as a tool. Indeed a specialized variant was evolved on the Upper Alt and on the Upper Maros; G. Nagy terms it the Agathyr-sian axe. The most celebrated representatives of the type are the gold specimens unearthed at Csófalva in the Upper Alt basin.<sup>9</sup>

<sup>1</sup> *Dolgozatok*, vi (1915), p. 260.

<sup>2</sup> *Ibid.* iv (1913), pp. 270, 392; cf. Pârvan, *Getica*, figs. 287-9.

<sup>3</sup> Pârvan, *Getica*, pl. xx, 1.

<sup>4</sup> *Op. cit.*, p. 757.

<sup>5</sup> Hoernes, *Urgeschichte*, p. 473.

<sup>6</sup> *AE.* xxix, p. 166, figs. 3-5. Appar-

ently horse and rider had been interred together.

<sup>7</sup> *l.c.*, p. 167.

<sup>8</sup> *Real.* viii, p. 49.

<sup>9</sup> Childe, *Aryans*, fig. 24, 2; Pârvan, fig. 265; *AE.* xxxiii, p. 310, figs. 34-40.

They are certainly descended from the series represented at Hajdu Sámson (Fig. 147, 5); but, in view of the elaboration of the back, should not be confused with the latter as they are by Nagy and Pârvan. We assume that the type was introduced (or rather reintroduced) from the Lower Maros, and then developed locally. The elaborate form is confined to the Alt and the Upper Maros,<sup>1</sup> and grows into a still more developed type with elongated back that is found also in Bukovina<sup>2</sup> and in Slovakia.<sup>3</sup> These axes are often ornamented with a delicately engraved 'sickle pattern', reminiscent of that on the axes of type A1 from Hajdu Sámson. It is, in fact, almost certainly a degenerate form of the latter, but the frequent confusion<sup>4</sup> between these degraded 'sickle patterns' and the glorious scroll work of Hajdu Sámson, Mezöberény or Gaura can only be due to very superficial examination. The late date of our type is given by its association with hammer-axes of type A3 at Domahida, with late spear-heads at Abauj Szantó, and with socketed celts, late spear-heads and axes like at Draşna-de-Jos north of Ploesti in Rumania.<sup>5</sup>

*Relation  
to type  
C1*

In the area where these axes are concentrated, hammer-axes of series A are very rare and are represented mainly by late types.<sup>6</sup>

*Axes of  
type A  
rare*

Swords, confined to type C3, are represented principally by broken specimens from large founders' hoards.<sup>7</sup> These lay mainly on the frontiers of the province, but two enormous rapiers<sup>8</sup> have been found stray in the heart of Transylvania. Both have marked midribs and three rivet-holes in the triangular, tangless butts, and exceed 90 cm. in length. They agree exactly with the 'Shardana' sword from Palestine in the British Museum.<sup>9</sup> Our rapiers may, therefore, be much older than the period under discussion and be connected with Aegean trade during the Middle Bronze Age. On the other hand, they have a certain likeness to a huge iron rapier found at Aldoboly on the Upper Alt.<sup>10</sup> It was 113.5 cm. long; the hilt had once been plated with silver. The guards are fashioned to represent lions, and the pommel, of the antennae type, de-

*Swords  
rare*

*Rapiers*

<sup>1</sup> *AE.* xxxiv (1914), p. 55 (Varfalva).

<sup>2</sup> At Sereth, Much, *Kunsthist. Atlas*, pl. xxiv, 14.

<sup>3</sup> Hampel, pl. xxxii, 4.

<sup>4</sup> Even in Reinecke, *AE.*, 1899, and still more in Pârvan.

<sup>5</sup> *Dacia*, ii, p. 363, pl. III.

<sup>6</sup> Cf. Hampel, pl. cxliii; *Dacia*, ii, p. 363.

<sup>7</sup> Ispanlaka (Alsó Féher) Hampel, pl. cxliv, cf. pls. clxxi, clxxx; *Dacia*, ii, pp. 351-6.

<sup>8</sup> Magyarós (Udvarhely, M. Sepsz. György) and Saromberké (Kolozsvár, cf. Hampel, pl. xx, 5).

<sup>9</sup> *BMBronze*, fig. 179.

<sup>10</sup> *EMU.* 1895, p. 19, fig. 22.

picts birds' beaks.<sup>1</sup> This object must be an oriental import dating possibly from the first half of the 1st millennium.<sup>2</sup> It is not certain that the bronze or copper rapiers are much older.

*Sickles* Another implement, typical of Transylvania, is the sickle with looped tang. The type, ultimately derived from the very ancient Mesopotamian form, recurs in South Russia and the Caucasus. Only a few specimens found their way from Transylvania westward as far as Velem Szt. Vid.

*Gold vases* Transylvania is rich in gold, so that it is natural that many objects of the precious metal should be found there. Besides the axes from Csófalva, we may mention the gold vases from Bénye<sup>3</sup> and those found on the borders in County Bihar.<sup>4</sup> And it would be there that the simpler bracelet with wiry double-spiral ends (Fig. 224, d) developed into the form with fan-shaped ends (Fig. 224, f); for the intermediate stages with flat, arc-shaped fans and wiry bodies are best illustrated in Transylvania.<sup>5</sup> In the same complex as the later bracelets oriental elements appear in the form of zoomorphic ornaments best illustrated in the celebrated treasure found at Michalkow in East Galicia.<sup>6</sup> The animals are not here treated in Scythian style; their nearest relatives are found in Caucasian graves of the Koban period and are pre-Scythian; but the remaining motives are purely western.

*Imports from North Hungary* The wealth of the land in gold naturally attracted foreign objects to Transylvania; from North Hungary came the compound spiral fibulae (associated at Suseni with a Bavarian bracelet of type E3),<sup>7</sup> the smooth bronze cups and perhaps the T-handled cauldrons mentioned on p. 375 above. East Hungary supplied late battle-axes with long spiked butts. *Illyria and Italy* Moreover, along the Maros Hallstatt (Illyrian) and Villanovan types, that are lacking altogether in the Banat, are found sporadically. We may mention spectacle brooches from Ördöngös Füzes,<sup>8</sup> possibly a fibula *a navicella*<sup>9</sup> from Portus and another from Déva, and a Certosa fibula from Gyulafehérvár.<sup>10</sup> Parvân would also class as Italic the bronze chariot wheels and

<sup>1</sup> Cf. Minns, fig. 179 (Ananjino).

<sup>2</sup> Asur-nasir-pal (c. 880 B.C.) appears to be girt with a sword having a similar hilt, cf. de Morgan, *Mission au Caucase*, fig. 33, and *Perse*, iv, fig. 56.

<sup>3</sup> Pârvan, *Getica*, pl. xiv.

<sup>4</sup> Hampel, pl. ccxlv.

<sup>5</sup> Pârvan, *op. cit.*, figs. 228-9.

<sup>6</sup> Hoernes, *op. cit.*, p. 29. It belongs

to the same general context as the finds from Dalj, Fokorú, Bénye, &c.

<sup>7</sup> *Dacia*, i, pp. 350 ff., figs. 44, 76.

<sup>8</sup> Hampel, pl. ccxix, cf. *AE*, xv, p. 199.

<sup>9</sup> Pârvan, *Getica*, p. 383; but Márton, *AE*, xxxiii, p. 199, denies that it is to be thus described.

<sup>10</sup> *AE*, xxxiii, p. 332, fig. 119.

many of the horse-trappings found stray in Transylvania.<sup>1</sup> Some of these western objects would not be just imports, connected with the trade in gold, but would be the result of the incursions from beyond the Danube marked by the barrow at Maros Csapó.

It will be noted that all the datable imports belong to the last half of Period VI or a still later date; the fact is most significant. It means that the serious exploitation of the gold *on the inner slopes* of the Transylvanian ring only began in the Late Bronze Age. Previously the main supplies must have been drawn from washings in the Körös, the Lower Maros, and the Banat streams along whose banks Early and Middle Bronze Age types of foreign origin do occur. Moreover, on the Upper Maros the appearance of Late Bronze and Early Iron Age types that are missing in the area of the Vattina culture proper is an argument for the higher dating of the last-named culture. It is further significant that the western objects are exclusively of Early and Middle Hallstatt (Benacci II) types. The brilliant late phase, characterized by the Venetic situla style, is unrepresented along the Maros: the next Italic objects after the Benacci II fibulae, &c., are Certosa brooches: the reason is, as Pârvan<sup>2</sup> has pointed out, that by the seventh century the oriental Scythian influence was strong enough to exclude western elements altogether. The *floruit* of the Transylvanian Bronze Age accordingly lasted from 1000 or later to about 550: bronze was then ousted by iron introduced by the Scyths from South Russia.

*Chrono-  
logical  
inferences*

The Transylvanian civilization just described seems then on the whole to be based upon an extension of the urnfield cultures of the Hungarian plain—an extension actuated and eventually itself overlaid by a push from the west and the north. A native substratum may be assumed, but its extent cannot be gauged till further excavations be undertaken; as far as the stray bronzes tell us anything, Transylvania might have been totally evacuated during the second millennium. One suspects, in fact, that it was still in the hands of the nomads who had arrived in Period III and formed an outpost of the South Russian steppe culture all through the height of the Subboreal epoch. That would explain the close analogies between its civilization and that of the Ukraine, when the onset of a moister climate made a return to settled agriculture desirable.

*Conclu-  
sion*

<sup>1</sup> Hampel, pls. LIX, LX, 5 (bit of Benacci I shape), LXII, 2.

<sup>2</sup> *Getica*, p. 770.



## V. FOREIGN RELATIONS IN PERIOD VI

*The West* Groups 2, 3, and 4 constituted a closed province separated by a sharp frontier along the Danube from the Pannonian region. In its Late Bronze Age this province fulfilled a very different role from what it had in the past. Westward its wealth in gold and copper and its lack of tin involved a certain amount of external relation with the area beyond the Danube, and so we find Transylvanian bracelets as far as Bellye in Tolna County on the way to the antimony mine of Velem; but influence from East Hungary beyond the Danube was minimal. On the contrary, as we have seen, Italian influences, mediated by Pannonia, and even raiding bands of horsemen from the latter area, made their way up the Maros. In its relations with the west East Hungary was now passive.

*The Aegean* The reversal in the mutual positions of East Hungary and the Aegean was even more complete. If not without reactions in the opposite direction, we have seen how Aegean influence had constantly flowed up the Danube and the Tisza; the settlements on the river banks and in the Banat had been the great intermediaries in its transmission. A last reminiscence of those Aegean connexions is seen in the Mycenaean 'pulley-motive' on the Vattina pommels that was adopted in North Hungary during Period VI. But any relations subsisting between the Aegean and the Danube basin were now in fact in the contrary direction. Actual evidence of these inverted relations comes from the Troad. As already noted, the pottery from Troy VIIa agrees remarkably both in the curvature of its handles and the wrinkled warts with which it was ornamented with the later Vattina wares. From the same barbarian village come moulds for a socketed celt<sup>1</sup> and for a shaft-hole axe<sup>2</sup> of a type that was still current at Pécska in Periods VI-VII, though perhaps more closely related to the Transylvanian form. All this suggests that a wave of invaders from East Hungary had reached the Troad by the ninth century. We have already indicated that at least one stream of invasion had passed along the Morava-Vardar valley into Macedonia from the Middle Danube basin a couple of centuries earlier. The inversion of the roles of the Aegean and the Danubian land was complete. Southern influence was not destined to pass up the Danubian corridor again till the Macedonian era.

<sup>1</sup> SS., No. 6768.

<sup>2</sup> SS., No. 6769; Götze's reconstruction is not altogether convincing.

Hungary had once been a channel by which Oriental influences reached Central Europe across the Russian steppes. At the beginning of the first millennium, however, the relations of the two areas were again reversed. We have already seen how Hungarian types of the Middle Bronze Age<sup>1</sup> were reaching the Dniepr in the latter half of the second millennium. The late native Bronze Age of the Ukraine is founded almost entirely on Hungarian types and represents, as indicated below,<sup>2</sup> an extension of a variety of East Hungarian civilization. Among numerous imports there from beyond the Carpathians, let us note the smooth bronze cup from Pavlovka,<sup>3</sup> a whole series of socketed celts,<sup>4</sup> certain types of pin,<sup>5</sup> and wheel pendants<sup>6</sup> and tanged swords from Podolia.<sup>7</sup> Tallgren<sup>8</sup> rightly declares that such agreements can only be explained by a migration of peoples, though, in view of the nomadic elements we have postulated in Transylvania and North-east Hungary itself, this need not mean a very large displacement of population. A slight reaction from this eastward movement may be detected in the zoomorphism of Michalkow and the curious axe of East Russian type from Felső Balog (Gömör).<sup>9</sup> By the eighth century Hungarian culture had advanced to the Dniepr. Was that its maximum limit?

*The  
Ukraine  
culture  
spreads  
from  
Hungary*

As is well known, a whole series of Hungarian and Central European types reappear in the Iron Age cemetery of Koban round about 1000 B.C. It has been a pet theory of certain English<sup>10</sup> and French<sup>11</sup> archaeologists that these types and the knowledge of iron were introduced into Europe from Koban across Hungary. That idea may be at once dismissed. Hungary and the Ukraine in the Hallstatt period constituted a back-water where bronze was still used—indeed a buffer between the Iron Age Caucasus and the iron culture of the Alps. Iron first reached Hungary from the west, not from the east.<sup>12</sup>

*Koban*

<sup>1</sup> Battle-axes B3, bracelets D1, C2, pins like B4, &c., pp. 272 ff.

<sup>2</sup> p. 398.

<sup>3</sup> Tallgren, *Pontide*, fig. 91.

<sup>4</sup> *Ibid.*, pp. 185, 186, 216.

<sup>5</sup> *Ibid.*, fig. 110, 1-2; cf. Hampel, pl. LII, 4.

<sup>6</sup> *Ibid.*, fig. 87; cf. Hampel, pl. cxciv, 2-4.

<sup>7</sup> *Ibid.*, fig. 112, 1.

<sup>8</sup> *Ibid.*, pp. 216 f.

<sup>9</sup> Hampel, pl. xciv, 8, obviously connected with the trade in antimony bronze. The Transylvanian sickle

need not be a reflex of fresh eastern influence, since a small implement from Bılce Złota (*Man*, xxiv, 64, fig. 7) suggests that the Mesopotamian type had already reached the country west of the Dniepr about 2000 B.C.

<sup>10</sup> Peake, *Bronze Age*, pp. 121 f.

<sup>11</sup> de Morgan, *Prehistoric Man*.

<sup>12</sup> Note further that the bronze bits from the Caucasus are quite unlike those from Hungary, cf. Chantre, *Caucase*, pl. xxxi bis, and LXI, and *AE*. xxix, p. 166, figs. 4-5; xxv, p. 190, &c. The horn bits are really similar.

*Invasion from Hungary?* On the other hand, the author<sup>1</sup> has suggested a migration from Hungary to the Caucasus to explain the appearance there of Hungarian types of the Middle Bronze Age—raquet pins,<sup>2</sup> spiral finger-rings,<sup>3</sup> earrings with flattened ends,<sup>4</sup> arm cylinders with spiral ends,<sup>5</sup> ribbed bracelets<sup>6</sup> like type B<sub>1</sub> and other like C<sub>3</sub>,<sup>7</sup> and horn cheek-pieces for bits.<sup>8</sup> Such a movement is still possible and would help to explain the seeming reduction in the population of Hungary in Period VI. But the ground is being cut away beneath it as more and more of the common types—the spiral earrings, the raquet pins—are coming to light much earlier in Mesopotamia. The Caucasus, Hungary, and the Alps appear with growing clarity as reflexions of the mighty civilization of the Tigris and Euphrates that need have no direct connexion with one another. That is the only possible explanation of the agreements between Koban and Hallstatt, since the common types of the Iron Age are totally missing between the Volga and the Danube; it may equally hold good in the Bronze Age.

Hence no material contribution to culture—least of all the use of iron—was transmitted during Period VI across the Russian steppes to Central Europe through Hungary or by any other route. At the beginning of the first millennium the movement of culture was from west to east and from north to south.

## VI. THE SCYTHS IN HUNGARY

A restoration of the old east to west relationship did, however, take place about 500 B.C. The Scyths made raids into East Central Europe, and in Hungary made a profound impression.

*The northern route—Silesia* The Scythian incursions followed two roads:<sup>9</sup> one, across Galicia, brought them to the Upper Oder; the other led across Moldavia to North Hungary and Transylvania. The first route was responsible for Vettersfeld; but this well-known treasure and the Scythian arrow-heads from the Lausitz<sup>10</sup> denote at most an extensive raid.

In Hungary the 'Scythians'—the term must not be inter-

<sup>1</sup> *Aryans*, p. 122.

<sup>2</sup> Chantre, *op. cit.*, pl. XIX, 1.

<sup>3</sup> *Ibid.*, pl. XVI, 7.

<sup>4</sup> *Ibid.*, pl. XIX, 1.

<sup>5</sup> *Ibid.*, pl. XVIII, 3.

<sup>6</sup> *Ibid.*, pl. XV, 11.

<sup>7</sup> *Ibid.*, pl. XLIX, 2.

<sup>8</sup> *Ibid.*, pl. XX bis.

<sup>9</sup> Pârvan, *Getica*, p. 728. He adds a third route up the Danube that seems unattested.

<sup>10</sup> Reinecke in *ZfE*. xxviii (1896), p. 9.

preted too narrowly—made a much deeper impression. The regular use of iron was introduced from the east, though the earliest iron objects had come from the opposite quarter. But it would be wrong to speak of a Scythian immigration or of 'compact bodies of Scythians dwelling in Hungary'.<sup>1</sup> Such expressions would only hold good of Transylvania, and even there only with qualifications.

*Hungary:  
no  
Scythian  
coloniza-  
tion*

In the Danube-Tisza plain a considerable number of stray finds and a few graves mark the course of Scythian raids. The invaders seem to have entered by the passes into Subcarpathian Ruthenia, and then spread (a) westward across the sandy

*Spread of  
Scythian  
objects*

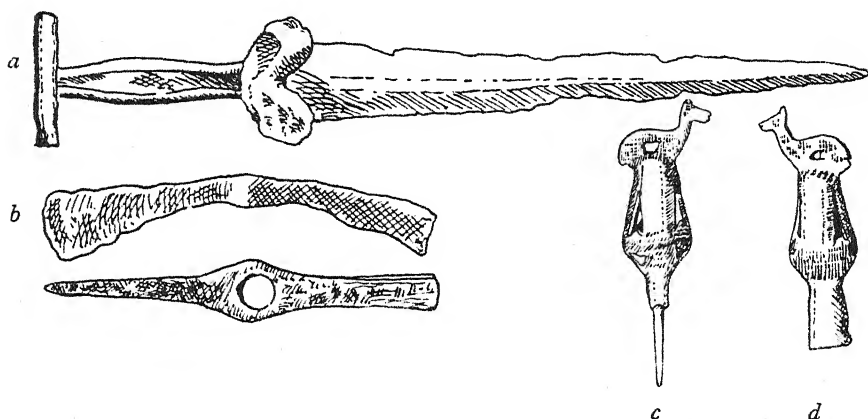


FIG. 226. Scythian sword, axe ('sagaris'), and pole-tops, all of iron, from graves in Hungary.  $\frac{1}{4}$

country of North Hungary and (b) southward along the plains beyond the Tisza towards the Banat. The distinctive objects may be briefly enumerated.<sup>2</sup>

1. Typical iron daggers with heart-shaped guards: Hat Mountains (Bereg), Bercel (Szabolcs)<sup>3</sup>, then (a) Gyöngyös, Pilin, and other sites round the Mátra and (b) Vršac<sup>4</sup> in the Banat.
2. 'Pole-tops' surmounted with animals: (a) Gyöngyös, (b) Szomhid (Arad).
3. Cauldrons: Ószöny (Komárom)<sup>5</sup>.

<sup>1</sup> Rostovtzeff, *Iranians and Greeks*, p. 42.

<sup>2</sup> Unless otherwise stated, based on Reinecke, *ZfE.* xxviii, pp. 10 f.; xxxi, p. (526); Hampel, *EMU.*, 1895, pp. 1 f.; Márton, *AE.* xxviii (1908), pp. 37 f., and Fettich, *Arch. Hung.* iii.

<sup>3</sup> *AE.* xxxv (1915), p. 135.

<sup>4</sup> Pârvan takes this as evidence of an incursion up the Danube through Wallachia.

<sup>5</sup> Those from Regöly and Körös, figured by Hampel, *EMU.*, p. 10, are Hunnish or Avar.

4. A gold 'shield boss' in the form of a deer, Tapió Szent Márton, and several gold objects from Zöldhalompusztá near Miskolc.<sup>1</sup>
5. Triangular bronze arrow-heads are very common, especially in counties Szabolcs and Hajdu, but extend as far as Velem and Bosnia.
6. Certain iron axes—in form very like the copper axe-adzes—are found with Scythian objects at Bercel, Gyöngyös, and in Transylvania. Nagy calls them *sagareis*.
7. Though not Scythian, an archaic Greek hydria of bronze,<sup>2</sup> dug up at Bene (Bereg), must have been brought by the same current.

Among the connected deposits we can only mention the group of objects from Bercel, the cemetery of Gyöngyös on the way to the Mátra Mountains by the northern route, and the barrow of Gyoma in Békés on the southern route.

*Cemetery  
of Gyön-  
gyös*

The burials at Gyöngyös<sup>3</sup> deviate considerably from the rites current on the steppes. No mound survived, and the bones had apparently been burned. All the graves scientifically excavated were very poor (one contained a good sword), but workmen had previously discovered what must have been a chariot burial.<sup>4</sup>

*Not pure  
Scythian*

The furniture of the graves was equally irregular. The pole-tops, bells, sword, and ladle were purely Scythian. Other finds—a trunnion celt, two bits, and a lance head—all of iron—might just as well have come from the west, and there was a bracelet with N decoration quite in La Tène style.<sup>5</sup> Finally, the pottery included fragments of a big black urn ornamented with warts in the old Hungarian mode, and a bowl recalling local La Tène shapes. Gyöngyös was not the cemetery of a community of Scyths, but it contained Scythian elements and one grave, perhaps the remains of a Scythian chief.

*La Tène  
parallels*

*Barrow  
of Gyoma*

At Gyoma on the Körös<sup>6</sup> the interment had taken place in a wooden chamber under a large barrow, and so corresponds better to the ritual observed farther east. Perhaps among the many barrows beyond the Tisza others will yield Scythian remains on excavation.

<sup>1</sup> *Arch. Hung.* iii, Fettich considers both groups were derived from graves.

<sup>2</sup> Pärvan, *Getica*, pl. xviii.

<sup>3</sup> *AE.* xxviii, pp. 37 f. The bulk of the finds were dug up by peasants, but Dr. Márton hurried to the scene and excavated eleven graves. Cp. n. 1

<sup>4</sup> This of course recalls the Celtic culture of the Marne, but is well attested in Scythia too.

<sup>5</sup> *l. c.*, fig. 1, 8, and p. 44. The lance-head also has Celtic parallels.

<sup>6</sup> *AE.* xxv (1905), p. 236.

The foregoing survey shows how fantastic it would be to speak of a Scythian conquest of Hungary. Many of the stray finds, clustered about the centres of metallurgy, are quite obviously merely trade goods. The graves are minimal in number and far from typical (for instance the horse hecatombs are absent). But there certainly were 'Scythian' raids, and they may have sufficed to ruin the Egyek culture on the Upper Tisza.

The anticipations of La Tène seen at Gyöngyös and also at Bercel<sup>1</sup> are a warning against too high a dating of these events. Only the deer from Zöldhalompusztá might be sixth century; Scythian influence scarcely reached its maximum before the fifth.

*Lateness  
of Scy-  
thian  
raids*

In Transylvania the position is different. Scythian objects<sup>2</sup> are quite numerous, and some must be early. Moreover, there are several regular cemeteries<sup>3</sup> in which Scythian influence may be recognized. These are significantly located along the Maros, i.e. on the direct route from the goldfields to the Pontic region.

*Transyl-  
vania  
Ceme-  
teries*

But the burials are in no strict sense Scythian. There was no barrow, the corpses were sometimes contracted, in some cases they had even been cremated, though inhumation in the extended posture was the general rule. The only absolutely Scythian grave-goods were triangular arrow-heads<sup>4</sup> and penannular bronze ear-rings with conical knobs at the ends.<sup>6,4,5</sup> An iron bipennis is also probably Scythian—the *sagaris* of the Greeks.

*Divergent  
burial  
rites*

The other remains include rather formless iron knives, a sickle perhaps of oriental type, fibulae with simple arc,<sup>7</sup> with widened catch plate, as in Blinkenberg's type III, 3c<sup>8</sup> and an odd fragment reminiscent of Certosa,<sup>9</sup> beads of amber (allegedly Baltic) glass paste and shell, and cowrie shells. The commoner pots were large pithoi that look like elongated Villanova urns (Fig. 222), small jars of a still more Villanovan shape, and shallow cups with a thumb-grip handle.

*Fibulae*

The culture revealed in these cemeteries along the Maros is

<sup>1</sup> In the knife, *AE.* xxxv, fig. 2.

<sup>2</sup> Párvan gives a complete list of finds in *Getica*; note a very fine pole-top from Gernyeszeg, and mirrors from Pókafalva (Alsó Féher), Zsákod (Kis-Küküllő), and Fejerd near Cluj.

<sup>3</sup> Kisekemező, Piski, Gerepen, Nagy Enyed, Maros Gombos, Marosvásárhely (*Dolgozatok*, vi, 1915, pp. 277 f.). Probably the graves with contracted skeletons found at Bartholomä in the

Alt basin belong here, since they contained similar pottery with thumb-grip handles.

<sup>4</sup> Nagyenyed, Nagy, *Skythák*, pp. 54f.

<sup>5</sup> Marosvásárhely.

<sup>6</sup> Marosgombos.

<sup>7</sup> Kisekemező, *AE.* xxxiii, p. 145, fig. 32.

<sup>8</sup> Marosvásárhely, *Dolgozatok*, vi.

<sup>9</sup> Piski, *AE.*, l. c., fig. 45.

obviously hybrid. While the metal work is mainly Pontic (Greek or Scythian), the burial rites and pottery belong to a native culture still very vague. The Villanovan types and the cremations may be due to that extension of the Hungarian urn-field cultures indicated above. It would also be perfectly natural to derive the thumb-grip handles from the late Vattina<sup>1</sup> type, and Pârvan actually does this.

But the correspondence between the Transylvanian handles and those from Bosnia,<sup>2</sup> and Macedonia<sup>3</sup> on the one hand and from the Ukraine<sup>4</sup> on the other is more exact. The last analogy is easily explained; for the vases in question come from graves and *gorodishche* 'of the VIIth-IVth cent.' that are distinguished by Rostovtzeff from Scythian, and accordingly must belong to the Ukrainian outpost of Hungarian culture identified on p. 393. As for the Illyrian parallels, they can have but one explanation; we shall see in the final chapter that material from Macedonia and Bulgaria discloses a regular migration from the West Illyrian regions at the very beginning of Period VII that carried eastward fibulae and other types, evolved nearer the Adriatic. We have already met some of these very types along the Maros, and we shall find them much more common in Hungary west of the Danube. Since the barrow at Maroscsapó contained, together with Illyrian or Pannonian types of metal work, vases with thumb-grip handles, the latter were probably brought to Transylvania by that westward movement of which Maroscsapó is a conspicuous monument. The pottery, like the bronzes already discussed, is evidence of a movement from Illyria, parallel to that which affected Macedonia soon after 1000 B.C. And it shows that the ethnic substratum and cultural background upon which Scythian influence ultimately impinged was essentially Occidental.

Scythian influence in Central Europe was late and by no means intense. Only in a small region did it herald the Iron Age, a belated Iron Age in what had become a backwater. For the beginning of the Continental iron industry, we must look westwards across Pannonia to the slopes of the Alps.

<sup>1</sup> Cf. *Man*, xxvi, pl. κ (from which cemetery?).

<sup>2</sup> Čungar, Ripač, Donja Dolina, Debelo brdo, Glasinac; Casson, *Mac.*, p. 301.

<sup>3</sup> Chauchitsa, Casson, *op. cit.*, fig. 47.

<sup>4</sup> Rostovtzeff, *op. cit.*, pp. 91 f., fig. 9; cf. Tallgren, *Pontide*, fig. 112, 7; *Izv.* xxxv, pp. 66 f., figs. 2, 16, 19.



## FROM THE ALPS TO THE BALKANS

BY the Late Bronze Age the hilly area south of the East Alpine chain between the Danube and the Adriatic had been affected by at least two intrusive movements from the north whose repercussions perhaps reached Greece. But the area is unfortunately for the most part badly explored, and practically nothing has been published. We are generally forced to rely on inferences based upon the Bosnian material.

The parts of Western Hungary lying beyond the frontiers of group 1 of the Hungarian urnfields, together with Lower Styria and Croatia, have yielded a not inconsiderable number of winged celts of type B<sub>3</sub> that may indicate an occupation of the region during Period V. And it is from the same area or from immediately adjoining territories that the majority of swords of type Ao (Keszthely) have been found.<sup>1</sup> Similar swords occur as imports also in North Germany<sup>2</sup> as in Upper Italy,<sup>3</sup> and something similar was found in a barrow at Kokotsko near Plzen. In the same part of Western Hungary rapiers like A<sub>1</sub> and A<sub>2</sub> are occasionally found.

*Distributions of winged celts*

*Swords*

These bronzes are either, like the sword of type Ao, native, or connected with Bavarian and Italian industries. They are found in the area of the Pannonian urnfields only north of the Bakony and as far south as Pest, and then principally west of a line along the Kapos. In South Hungary, Slavonia, and Bosnia they are totally lacking, and are exceeding rare in Croatia and Styria. Then in Period VI the area of occupation extends westward up to and across the Alpine and Illyrian ranges bordering the Adriatic.<sup>4</sup>

The late winged celts B<sub>5</sub>, as in Italy and the North Alpine zone, are very common even far up the Mur, the Drave, the Save, and occur in North-West Bosnia. East of the Kapos line they are still exceptional. In the same area swords of type C<sub>3</sub> and C<sub>4</sub> are very common indeed; perhaps nowhere else are there so many. They extend southward to the Save, but penetrate into Bosnia only rarely along the Una and the Drina.

*Late Bronze Age celts and swords*

<sup>1</sup> Keszthely, Danube near Pressburg and near Pest (Hampel, iii, p. 81) Leobersdorf, Lower Austria (Menghin, *Niederösterreich*, pl. vii, 3), Styria (M. Graz).

<sup>2</sup> Splieth, pl. i, 9b.

<sup>3</sup> Montelius, *VCI.*, pls. 3, 6 and vii, 3; Peake, *Bronze Age*, p. 92.

<sup>4</sup> Cf. Reinecke's list, *MAGW.* xxx (1900), pp. 44 f.

But some spread down stream as far as Kisköszeg, Syrmia,<sup>1</sup> and North-West Serbia.

Hungarian types of sword are correspondingly rare; but there are mace-heads of North Hungarian type from the head waters of the Kapos and from Carniola<sup>2</sup>—perhaps due to trade.

*Fibulae* The fibulae serve still better to define the western province. The early type A1a is found in its extreme north-east at Haidehof puszta in Mosony. A3, too, is common to the northern part of West Hungary<sup>3</sup> and North Hungary. But from this point the evolution takes different directions on either side of the Danube. In the valleys of the Raab and Upper Drave the harp fibula A'3 develops out of A1 by an enlargement of the catch-plate and an extravagant prolongation of the spring. A genuine transitional form, A'2, with a spring about twice as long as in A2, is seen in a grave at Maria Rast in Styria,<sup>4</sup> where the normal form also occurs. The latter appears in Lower Austria within the limits of Period VI,<sup>5</sup> and survives to characterize the Hallstatt culture in East Central Europe.

*Bow fibulae* A second series developed farther west on both sides of the ranges bordering the Adriatic. It presupposes a phase of the simple bow fibula that is not certainly represented in the Danube basin.<sup>6</sup> The modification which we may term Dalmatian consists in introducing a second loop just above the catch-plate A''4. It appears already in Period VI at Maria Rast.<sup>7</sup> The development of this series in Bosnia and south of the Bakony is complicated by the influence of the Submycenaean type with widened catch-plate A''2 that appears in Bosnia perhaps as an import. The series develops along the Save to elaborate types like Fig. 224b. It characterizes the South Alpine and Illyrian Hallstatt culture, especially south of the Bakony, and spreads in Period VII as far as the Danube, with the urnfield culture of Dálya and Kisköszeg, and perhaps even up the Maros.<sup>8</sup>

*Spectacle fibulae* The third series is purely native. At Maria Rast<sup>9</sup> we have a spectacle brooch in which the two spiral disks are connected

<sup>1</sup> Cf. Hampel, iii, p. 82.

<sup>2</sup> p. 372, above.

<sup>3</sup> p. 372, above.

<sup>4</sup> Much, *Atlas*, pl. XL, 4; *Man*, xxviii (1928), 140, fig. 3.

<sup>5</sup> At Stillfried and Hadersdorf.

<sup>6</sup> There are of course quite a number of simple bow fibulae on both sides

of the Alps, but where they occur in a specific context they are demonstrably late.

<sup>7</sup> Much, *l. c.*, pl. XL, 2.

<sup>8</sup> *AE*. xxxiii, pp. 145 f.

<sup>9</sup> Much, *Atlas*, pl. XL, 5; *Man*, xxviii, 140, fig. 1.

by a short coil precisely as in the breast ornament of Fig. 183. This discloses the origin of the celebrated brooch that characterizes the Geometric period in Greece and the Hallstatt period of continental Europe. It is just the Lausitz-Illyrian breast ornament<sup>1</sup> with a pin added. The specimen from Maria Rast belongs to Period VI and is thus the oldest known example both typologically and by its context. But since we find in South Bosnia and in Macedonia in Period VII a quite primitive variant with no figure 8 twist between the spirals,<sup>2</sup> the invention of the type might have taken place a little farther south. The normal form is of course everywhere characteristic of the Hallstatt culture proper.

Finally, in Period VII we have a few foreign forms. Various Italian types—*a navicella*, &c., are quite common west of the Bakony.<sup>3</sup> On the other hand, in the Kapos valley and at Velem St. Vid we find clusters of North Hungarian fibulae.<sup>4</sup> Whether these, taken in conjunction with the maces, mean an extension of North Hungarian culture up the Kapos is not clear. In one case at Kurd they were found with Italian buckets, so they probably mean just 'trade'. That is certainly the explanation of their appearance at Velem, where the pottery is quite distinct from the Pilin-Egyek wares.

The metal types, indicating complicated ethnic and commercial relations, may be divided between two main cultural groups—one allied to the Tumulus Bronze Age of Bavaria, the other to the urnfield cultures.

## I. THE SOUTH ALPINE TUMULUS CULTURE

Remains of the tumulus culture assignable to Period V are very rare. At Hövej in County Soprony<sup>5</sup> a tumulus covered an inhumed body accompanied by winged celts of type B3, a socketed chisel, and a much corroded short-sword; higher up was a late Hallstatt interment. Obviously the Bronze Age burial need not be older than Period VI. The celebrated warrior's grave at Keszthely<sup>6</sup> is certainly older. Here the corpse lay extended in a sort of chamber of dry-masonry accompanied by a sword of type Ao and some atypical ornaments. Then, definitely belonging to Period VI, we find a few barrows assigned by Reinecke<sup>7</sup> to his phase A of the Hallstatt period, in

*Italian imports*

*Barrows at Hövej*

*Keszthely*

*Late Bronze Age barrows*

<sup>1</sup> p. 327, above.

<sup>2</sup> p. 404, below.

<sup>3</sup> *AE.* xxxiii, pp. 197 ff.

<sup>4</sup> p. 374, above.

<sup>5</sup> Hampel, pls. CX–CXI.

<sup>6</sup> Hampel, pl. CXXXIV; *AfA.* xv (1917), p. 260, pl. vi.

<sup>7</sup> *MAGW.* xxx, p. 45.

the midst of others that are definitely later. Reinecke cites Styria barrow 17 in the Hallstatt necropolis near Wies in Styria<sup>1</sup> that contained a bronze sword of type C3 with cremated remains, a barrow at Klein Klein<sup>2</sup> containing an antennae sword, and a winged celt of type B3, and another from Gomil Podsemel in Carniola<sup>3</sup> containing an antennae sword and a cruciform ornament with cremated remains. Reinecke leaves us to assume that similar early barrows will be found in many of the big cemeteries of the Hallstatt period in the Illyrian Alps, and the Bosnian evidence favours that view.

The affinities of the foregoing groups lie clearly enough in the west, and especially in Upper Bavaria. The data available do not suffice to decide whether the South Alpine barrows were built by descendants of some neolithic stock—perhaps the Laibach-Mondsee folk—or by invaders intruding during the Bronze Age from Upper Bavaria and Upper Austria. On the first assumption the affinities with Upper Bavaria would be explained by common elements in the neolithic substratum—Laibach-Mondsee-Altheim, and the parallel action of Italian and Hungarian metallurgy on both groups. In any case the influence of the urnfield folk in Styria and Carniola can scarcely be denied. The transformation of the Bronze Age culture of the region into an Iron Age one would be due to the proximity of Italy and the fact that the trade routes leading to the copper mines of North Hungary and the amber deposits of East Prussia traversed its territory. As we have seen, typical North Hungarian forms spread westward from the Danube to Carniola, and the later barrows of Period VII are rich in amber.

During the latter period we have besides the well-known Hallstatt necropoleis of County Sopron, of Styria, Carniola, and Croatia remains of a nomadic stock of horsemen on the West Hungarian löss lands who were interred with their horses in wooden chambers under barrows.<sup>4</sup> It was these who made raids across the Danube and up the Maros towards the Transylvanian gold mines as described in the last chapter.

To find a second group comparable to the foregoing we must go southwards up the Drina to the plateau of Glasinac so famous for its Iron Age cemeteries. It is a highland zone

<sup>1</sup> *MAGW.* xv (1885), p. 120.

<sup>2</sup> *Mitt. Hist. Vereines f. Steiermark* (Graz), vii, p. 186.

<sup>3</sup> *MAGW.* xxx, p. 45, figs. 1-3; Hoernes, *WPZ.* ii, p. 120, assigns the same burial to the later Hallstatt

period. The urn seems similar to Maria Rast types.

<sup>4</sup> *AE.* xxxiv (1914), pp. 388 ff. and fig., p. 398 (Somlyó, Czurgó, Szalacska, Erd-Batta), cf. *Arch. Kozl.* xxii.

most accessible on the east from the Drina valley. In several of the groups of barrows scattered over this area and round Višegrad is a nucleus of inhumations accompanied by a pure Bronze Age furniture: bracelets of types B1,<sup>1</sup> C2,<sup>2</sup> C3,<sup>3</sup> and A4,<sup>4</sup> tutuli A2,<sup>5</sup> breast ornaments like Fig. 183,<sup>6</sup> and a few fibulae of type A1<sup>7</sup> and A''3.<sup>8</sup> At least in one of these early barrows<sup>9</sup> amber beads were found, but it is not clear whether they belonged to the primary interment.

Possibly contracted skeletons found in cist graves without other furniture in Hercegovina<sup>10</sup> are as old or even older. And to the same period might be assigned some of the very mixed material from Debelo brdo near Sarajevo. This hill fort has yielded, as we saw, excised ware reminiscent of the Slavonian as well as rough ware with thumb-grip handles of Iron Age type. As a caution against a too high dating of even its earliest pottery, we should note that stone battle-axes, like those from the fort, have been found in the Glasinac barrows apparently associated with iron objects.<sup>11</sup>

At Debelo brdo a small hoard of late bronzes, including socketed celts, a curious axe reminiscent of Caucasian types, a spear-head with leaf-shaped blade and a dagger with flanged tang pierced for rivets, was discovered.<sup>12</sup> The mould for a similar dagger was unearthed in the fort at the Rama springs near Prozor.<sup>13</sup> These weapons certainly resemble swords of type C3 or even C1, but do not suffice to connect the swords of type C3 with the Glasinac culture of the Bronze Age, since no swords of that type have been found south of a line drawn from Ripač to Zvornik on the Drina.

The Bronze Age barrows evidently denote a comparatively early settlement of tumulus-builders, clearly allied to those dwelling north of the Alps. Again, it is impossible to decide whether the northern affinities should be explained by a common 'neolithic' substratum—the Slavonian folk who had settled at Debelo brdo were allied to the Mondsee-Altheim

*Cist  
graves in  
Hercego-  
vina*

*Weapons*

*Affinities*

<sup>1</sup> Glasinac, *MAGW.* xix, p. 145, fig. 203.

<sup>2</sup> Strbci VIII, *WMBH.* vi, p. 60.

<sup>3</sup> Gučevo IV, *WMBH.* v, p. 7.

<sup>4</sup> Strbci I (*WMBH.* vi, p. 54); Pleševica I (*ibid.* v, p. 7); the ends of these bracelets were not, however, twisted together, but open as at Wabern in Switzerland (*AsA.*, 1918, p. 73, fig. 1).

<sup>5</sup> Han Osovo I, (*WMBH.* vi, p. 21).

<sup>6</sup> *MAGW.* xix, p. 145; *WMBH.* i, p. 150.

<sup>7</sup> Strbci I, &c.

<sup>8</sup> Sokolac III, *WMBH.* xi, p. 58.

<sup>9</sup> Gučevo IV, Vrlazije IV, 2 (*ibid.*, iv, p. 6).

<sup>10</sup> *WMBH.* iv, pp. 31, 177.

<sup>11</sup> Kovačev d6 VI (*WMBH.* i, p. 129); Vrlazije IV, i (*ibid.* iv, p. 6).

<sup>12</sup> *WMBH.* iv, pp. 58 ff., cf. p. 187.

<sup>13</sup> *WMBH.* viii, p. 49.

groups—and subsequent parallel relations with Hungary and Italy, or by an ethnic movement from the north during the Bronze Age.

*Relations  
with  
Hungary  
and  
Greece*

To the development of the Late Bronze Age culture Hungary, Italy, and Greece contributed. From the former area<sup>1</sup> sickles and socketed celts which are found in a line of hoards were imported. On the other hand, the fibulae, at least A''<sup>3</sup>, most probably came direct from the south of the peninsula.<sup>2</sup> Reminiscences of intercourse with the Mycenaean world may be seen in the spirals on the bronze collar from Mlagj, barrow XXIX,<sup>3</sup> which is still 'Bronze Age', and in the use of the ewer as a pendant in the Iron Age. Presumably contact was affected by way of the Narenta and the Adriatic. And the first iron objects might have been introduced by the same channel, just as greaves<sup>4</sup> and helmets of Corinthian type, Greek fibulae,<sup>5</sup> vases of bronze and clay and other products<sup>6</sup> of Hellenic industry were later on.

*Relation  
to  
Iron Age  
culture*

Casson,<sup>7</sup> who has overlooked the Bronze Age barrows altogether, finds it necessary to assume an immigration from the north to explain the rise of the iron-using culture in Bosnia. Connexion with the north is certainly attested by such foreign substances as amber. And the adoption of slashing swords as weapons and spectacle brooches for fastening the cloak denotes a considerable change in the people's habits. On the other hand, the safety pins and also the prototype of the spectacle brooch were used in the 'Bronze Age', and the Glasinac form of brooch differs materially from the normal type current farther north in the absence of the figure 8 loop between the spirals.<sup>8</sup> Again, though no specimens have been found as far south as Glasinac, bronze swords like type C<sub>3</sub>, from which the Glasinac and Hallstatt forms are derived, are found some way up the Drina valley.<sup>9</sup> If the Hallstatt culture had been brought ready made to Glasinac these peculiarities would be hard to understand. Other Glasinac types do in fact go back to the Bronze Age group. So the favourite fibula A''<sup>4</sup> is a natural outgrowth of A''<sup>2</sup> that we do find in Bosnia. A''<sup>4</sup> is in fact common to Istria,

<sup>1</sup> Čurčić in *WMBH.* xi, p. 94; cf. Casson, *Macedonia*, p. 297.

<sup>2</sup> The gold fibula from Attica, Blinkenburg, type II, 23, is a good parallel.

<sup>3</sup> *WMBH.* i, p. 153, fig. 61.

<sup>4</sup> *WMBH.* iii, p. 13, fig. 23; Casson, *op. cit.*, p. 318.

<sup>5</sup> Cf. *JfA.* ii, pp. 1 ff.

<sup>6</sup> e.g. the silver boar of sixth to fifth-

century type, *WMBH.* vi, p. 51.

<sup>7</sup> *Macedonia*, pp. 305 ff.

<sup>8</sup> The normal type is never found at Glasinac, though common farther north and west, *WMBH.* xi, p. 97.

<sup>9</sup> Radaljska ada, *WMBH.* i, p. 318; Perinograd, near the confluence of the Drinača (*ibid.* iv, p. 181), cf. *WMBH.* vi, p. 525.

Bosnia, and even Arcadia.<sup>1</sup> Its home might just as well be located in Bosnia or even farther south as in Istria or Styria.

On the whole a fresh invasion is not absolutely necessary to explain the Glasinac culture. It may have arisen locally out of the Late Bronze Age civilization, though new ethnic elements were certainly dwelling quite near, e.g. at Jezerine.

A link with the tumulus culture farther north is perhaps provided by a single barrow excavated near Joševa in North-Western Serbia.<sup>2</sup> It, however, covered cremated remains accompanied by a short sword of type C3 (30 cm. long), associated with a small amphora with vertical ribs on the body, compared by Reinecke to vases from Vršac, Gerjen, and Pilin. This barrow may mark an advance of the tumulus culture eastward. The swords of the type C3 from Kisköszeg,<sup>3</sup> Slavonia,<sup>4</sup> and the Drina valley,<sup>5</sup> might be connected with the same push. Perhaps it will explain the apparent evacuation of Sirmia during the greater part of Period VI.

*North  
Serbian  
barrow*

## II. THE INVASION FROM EAST CENTRAL EUROPE

Urnfield folk from farther north inundated the Middle Danube basin in two waves. The first described in the last chapter brought the Late Lausitz culture from Moravia into Hungary across the Slovakian mountains and round them along the Danube; its primary aim was the copper of North Hungary; the second would have spread more to the southwest across Lower Austria and perhaps up the Raab to Styria, Bosnia, and the Adriatic coast. The intention was presumably to seize the lead and iron mines of Styria, the antimony of Velem, and the trade routes to the Adriatic. But the details of these movements cannot at the moment be recovered. We only see certain results, and them none too plainly; we cannot even distinguish the two waves very sharply; for a long time Western Hungary was very closely related to the adjacent territory north of the Danube, as the bronzes have shown.

Three monuments enlighten us as to the position after the migrations: the settlement of Velem St. Vid, the cemetery of Maria Rast, and perhaps the lake-dwelling of Donja Dolina.

Velem near Kőszeg (Güns) on the new Austrian border was a great industrial village. It owed its importance presumably to a deposit of antimony, that element having been used to

*Foundry  
at  
Velem St.  
Vid*

<sup>1</sup> Blinkenburg, type III, 3 c, fig. 69, &c.

<sup>3</sup> N. H. Museum, Vienna.

<sup>4</sup> Cf. Hampel, iii, p. 82.

<sup>2</sup> *MAGW.* xxx, p. 51, fig. 47.

<sup>5</sup> *WMBH.* i, 1893, p. 318.



harden bronze in Hungary, East Prussia, and the Caucasus.<sup>1</sup> How old the settlement is we shall only know when the site has been carefully excavated and the material fully published. The character of the village is shown by the number of moulds, blast pipes, and other appurtenances of the smith's workshop that have been brought to light.

*Lausitz and North Alpine pot forms* The earliest pottery represented in any quantity belongs for the most part to the North Alpine group of Period VI: to this class belong urns with cylindrical necks like Fig. 189,<sup>2</sup> jugs like Fig. 196 from the Tyrol,<sup>3</sup> bilobate mugs as at Alpenquai,<sup>4</sup> and other forms. The fluted ornament, turban dishes,<sup>5</sup> and amphorae<sup>6</sup> are more reminiscent of the Lausitz series. The bizarre shapes that characterized the Hungarian urnfields at all times are absent.

*Bronzes* The bronzes that were made locally or imported for remelting include a curious medley of types. Relations with North Hungary were particularly close, showing that Velem's antimony bronze was appreciated by the smiths of Pilin and Aszód; from that direction came various pendants<sup>7</sup> and fibulae of the Hungarian series and eventually Scythian forms. Italy supplied a multitude of types, beginning with Benacci I razors,<sup>8</sup> and developing particularly later when fibulae with prolonged feet were imported in vast numbers. The north sent, together with amber,<sup>9</sup> characteristic tutuli; Bavaria and Switzerland vase-headed pins like D11,<sup>10</sup> and knives of type 14.<sup>11</sup>

The factories of Velem continued to flourish till Roman times, and the later Hallstatt and La Tène periods are even better represented than Periods VI–VII.

*Maria Rast* The real character of the South Alpine urnfield culture is best seen in the great cemeteries along the Upper Drave in Styria. Unfortunately Maria Rast was excavated over forty years ago and badly published,<sup>12</sup> while Pettau has never been published at all. The burial rite did not diverge from that usual in urnfields.

*Pottery* The pottery is all dark-faced, slipped, and polished, but

<sup>1</sup> Cf. von Miské, *Velem*, pp. 26–34; cf. *MAGW.* xxx, p. (32).

<sup>2</sup> Von Miské, *Velem*, lxvi, 8.

<sup>3</sup> *Ibid.*, pl. LX, 7.

<sup>4</sup> *Ibid.*, pl. LX, 10.

<sup>5</sup> *Ibid.*, pl. LXIV.

<sup>6</sup> *Ibid.*, pl. LX, 3.

<sup>7</sup> *Velem*, pl. LIII, 16; *ibid.* xxxvii, 54.

<sup>8</sup> Unpublished: the form is that of Randall-MacIver, *Villanovans*, fig. 11.

<sup>9</sup> Antimony bronzes are particularly common in West Prussia and Silesia.

<sup>10</sup> Pl. XII, 24.

<sup>11</sup> Pl. XVII, 23 ff. Note that antimony bronzes are found in Switzerland too, p. 26.

<sup>12</sup> *AfA.* 188; Much, *Atlas*, pl. XL. The figures are very misleading as far as the pottery is concerned.

very rarely graphited. The large urns, often 60 cm. high, are generally piriform with the widest part at the bottom. A plastic rope ornament with three or four lugs projecting downwards from it run round below the widest point. 'Villanovan' forms such as we have at Hadersdorf are exceedingly rare. Small urns in the shape of a wide shallow jug with a short conical neck and a handle rising above the rim are still more common than the piriform type. The covers are either turban dishes with inturned rims or similar dishes with vertically-pierced lug handles. For decoration we find, besides fluting, imitation cord impressions as in the Tyrol, and, on one vase, stamped Ws and circles encrusted with white paste in thoroughly Pannonian style.

Metal objects were rare, as is usual in urnfields. The most important is a knife with an iron handle and scalloped back<sup>1</sup>—probably the earliest iron object found in Central Europe. In addition we have the fibulae already noted—harp-fibulae including the prototype, an early version of A''4, and the original spectacle brooch.

*Iron*

The knife fortunately leaves no doubt whence the first iron reached Central Europe: for it is a well-known Benacci I<sup>2</sup> form. The prototypes for the fibulae may also have come up the Adriatic. The diagnosis of the pottery is not so easy. The plump urns with their encircling plastic ribs might be connected with a Lovasberény type; the vase with stamped and encrusted ornament proves conclusively some relation to the Pannonian group of Middle Bronze Age urnfields. The only Lausitz elements that one can see are the flutings and the turbaned dish. Perhaps it would be more correct to assign the Styrian culture to Hungarian folk pushed aside westward rather than to the Lausitz intruders themselves. Such a westward retreat would be parallel to the assumed movement of Bijelo brdo people towards Este and the Po valley.

*Affinities*

The spread of the urnfield cultures was in Period VI mainly westward. Its results are seen in Este II and the numerous cemeteries of Istria, Dalmatia, and Bosnia. Then in Period VII a reaction set in: at Dályá and Kisköszeg<sup>3</sup> we find extensive cremation necropoleis furnished with pottery and bronzes that bear no relation to the native types once found at Kisköszeg, nor to those still in use in the Banat and eastern Syrmia.

*Eastward  
spread  
in  
Period  
VII*

The urn in these cemeteries is a Villanovan form with a

<sup>1</sup> Much, *Atlas*, pl. XL, 6.

<sup>2</sup> Montelius, *VCI*, pl. 6, 1.

<sup>3</sup> *AE*. xxv, p. 190; *WPZ*. iv, p. 38, figs. 8-9.

*Dályá* globular body, a single handle on the shoulder, and a conical neck, just such as is found at Jezarine,<sup>1</sup> Parenzo,<sup>2</sup> Nesactium,<sup>3</sup> Sta Lucia, and in Central Italy.<sup>4</sup> The metal types belong equally to the Southern Hallstatt culture—iron trunnion celts,<sup>5</sup> bow fibulae with double twist and enlarged catch-plate, zoomorphic

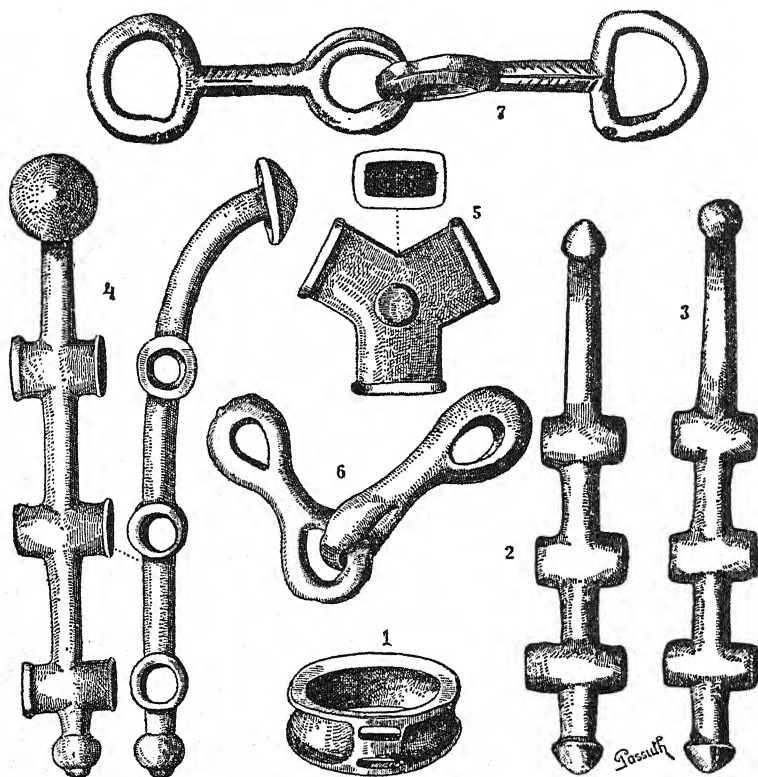


FIG. 227. Bits and trappings, Kisköszeg, after *AE*

fibulae, bits with three parallel holes in each cheek-piece<sup>6</sup> (Fig. 227), and other Hallstatt forms. Lengyel was occupied again about the same time,<sup>7</sup> and rather later we have an urn-field with Styrian types of bronzes at Tamási in Tolna county.<sup>8</sup>

<sup>1</sup> *WMBH*. iii, p. 85, fig. 91.

<sup>2</sup> Hoernes, *Urgeschichte*, p. 465.

<sup>3</sup> *Ibid.*, p. 469, 2 and 7.

<sup>4</sup> e.g. Randall-MacIver, *Villanovans*, pl. 17, 14.

<sup>5</sup> As in Lower Austria, Styria, Bosnia, and Italy.

<sup>6</sup> Besides Kisköszeg and Dalj, this type of bit occurs in the barrow at

Somlyó (with a trunnion celt), and then in Transylvania at Maroscsapó.

<sup>7</sup> We assign to this phase the pit-dwellings, the fire-dogs of Kalenderberg type, the fluted ware like *TT.*, pl. LXXXVI, and fibulae and celts like those from Kisköszeg.

<sup>8</sup> Wosinski, *TT.*, pls. cxix and cxx.

The gold fibula of Fokorú and some of the ornaments from Michalkow in Galicia<sup>1</sup> belong to this Pannonian group.

The celebrated pile-dwellings in the Save bed at Donja Dolina,<sup>2</sup> like those at Ripač on the Una,<sup>3</sup> belong for the most part to an advanced phase of the Iron Age. They can claim a place here for two reasons only. Firstly, they were built on the log-cabin principle like the Lausitz houses of Buch and the lake-dwellings and moor-villages of Period VI in Wurtemberg and Switzerland.

*Bosnian  
pile-  
dwellings  
Log-  
cabins*

Secondly, there are indications that the foundation of the settlements goes back to Period VI or even to the Middle Bronze Age. At Donja Dolina a short sword like AA<sub>4</sub> (with bronze hilt) and a slashing sword of type C<sub>3</sub> were found.<sup>4</sup> And the pottery includes vases with *ansa cornuta*<sup>5</sup> identical with those from the Italian *terremare* as well as a few vases with wart ornament<sup>6</sup> reminiscent of Tószeg C. If the *terremare* in the Po valley had been due to a migration of some Tószeg-Gerjen people from Hungary, the settlement of a branch of the same stock on the Save would be readily intelligible.

*Swords*

The bulk of the pile-dwelling pottery, however, with its fluted ornament, like the style of architecture, suggests contact with the Lausitz folk. The 'Villanovan' urns and high handles, however, might be survivals from the Middle Bronze Age of Hungarian group III, as might the common imitation cord ornament. The metal ornaments are all typical Illyrian Hallstatt (and La Tène) forms.

### III. CONCLUSION

It is clear that before the end of Period VI ethnic relations between the Alps and the Balkans were very mixed indeed. Many of the distinguishing forms of the later Hallstatt culture were certainly created here, especially on the fringe of mountains where Italian influence was first felt. It looks as if there was a real ethnic movement from this neighbourhood, parallel to that eastward up the Maros, with which burials with early iron swords, horse-trappings, spectacle brooches, &c., from

*Relations  
to  
Hallstatt  
culture  
of  
Austria*

<sup>1</sup> p. 390, above; cf. Reinecke, *Germania*, 1925, p. 53.

<sup>2</sup> *WMBH.* ix (1904), pp. 3-170; xi (1908), pp. 1 ff.

<sup>3</sup> *WMBH.* v, pp. 38 f.; xii, pp. 1 ff.

<sup>4</sup> *WMBH.* ix, p. 68. The sword from

Buzija district of Petrovac (*WMBH.* vi, p. 142) may be connected with Ripač, as the site is not very remote.

<sup>5</sup> *WMBH.* ix, pl. xxvii, 4, 7; xxxviii, 17, &c.

<sup>6</sup> *WMBH.* ix, fig. 23.

Moravia, Bohemia,<sup>1</sup> Silesia, and South Germany would have to be connected. The Hallstatt period falls outside the scope of this work, so that an elaboration of the point is excluded; but we may conclude by attempting an appreciation of the role of the Middle Danube over against the Aegean and the Adriatic.

*Relations with Greece* We have seen in Chapter XIX that by Period VI Aegean influence transmitted down the Morava had entirely ceased to affect North Serbia and the Banat. Naturally, therefore, none reached West Hungary or Croatia from this quarter. On the other hand, relations with the Adriatic, and hence directly or indirectly with Greece, are clear both in Bosnia and farther north. They are sufficiently attested by the Bosnian and West Hungarian fibulae of types A<sub>3</sub> and A''<sub>4</sub> respectively. It would, then, be natural to assume that the use of iron was learned from the same quarter. The knife from Maria Rast confirms that inference. We have already seen that the facts from East Hungary exclude the idea that the new metal was introduced from the east into the lands west of the Danube. Hence by Period VI the Danube had ceased to be a channel for the diffusion of southern or eastern inspiration; that spread on the contrary to the Danube down the Raab, the Drave, and the Save.

But the historians of the Dark Ages of Hellas and Italy expect us to produce out of a vaguely conceived and limitless 'Hungary' Achaeans, Dorians, Latins, Umbrians, Veneti, and perhaps even Etruscans! Can we oblige them?

*Achaeans and slashing swords* The insignia of the Achaeans would be the slashing swords of types C<sub>3</sub> and C<sub>4</sub>, perhaps also fibulae of type A<sub>1</sub>. As the swords in question only arrive late east of the Danube, and never got even as far south as the Maros on that side, East Hungary may be excluded, though a route across Transylvania is not inconceivable.<sup>2</sup> On the other hand, there are plenty of such weapons, as we saw, along the Alpine foot-hills, and a trail of them along the Save and Drave to the mouth of the Drina. But the absence of the swords from South Bosnia, the southern and eastern parts of Serbia,<sup>3</sup> Macedonia, and even

<sup>1</sup> Note for instance the appearance of Illyrian thumb-grip handles in the Hallstatt barrows of Bohemia; *Sb. Plzen*, viii (1923), p. 9; *MAGW.* xxxv. pl. II. For anthropological evidence in the same direction see Schliz, *AfA.* ix, p. 245.

<sup>2</sup> Leading from the Upper Tisza by the route marked by the Roumanian hoard of Drajna de Jôs, the passes behind Kronstadt.

<sup>3</sup> Serbia is of course scarcely explored; there is one such sword in Bulgaria, Casson, *Macedonia*, p. 171.

Thessaly is frankly discouraging. The position with regard to fibulae is even worse. The early types, A<sub>1</sub>, A<sub>1a</sub>, A'1, that appear in Greece with the first swords like C<sub>3</sub>, are missing in the whole Middle Danubian plain except for one specimen of A'1 from Vinča and another with leaf-shaped bow from the same site; the latter, being Mycenaean, like the one from Vardino<sup>1</sup> in Macedonia, must have come from the Aegean down the Morava, not vice versa. But of course the safety pin early became popular in Bosnia.

*Fibulae*

Still there is clear evidence of one invasion of Macedonia by people using fluted ware very like the Lausitz B ware of Silesia and Moravia.<sup>2</sup> The same folk affected Thessaly, and it may be that the concentric semicircle motive so common in the proto-Geometric pottery of Hellas was a reminiscence of the concentric fluted arcs, seen for instance on Fig. 182. This movement was the end of that incursion from the north that created the North Hungarian culture of Period VI. Those who participated had used swords of type C<sub>3</sub>, but they only reached Macedonia by the eleventh century—i.e. considerably after the first Continental swords had reached Greece and Egypt.

*The invasion of Macedonia*

The barrows at Halos in Phthia<sup>3</sup> are in general very like the Central European Bronze Age tumuli, and cover *inter alia* swords of type C<sub>3</sub>.<sup>4</sup> But these swords have already been translated into iron—a material that was never used for such early swords north of the Balkans. If these barrows indicate, as seems likely, an extension to North Greece of the Tumulus Bronze culture, their builders must have been resident in the South Balkans long enough to have their bronze weapons translated into iron. The burials do not denote a southward advance of the *Iron Age* culture of Glasinac, but might perfectly well belong to one branch of the people, another branch of whom, turning aside from the Drina-Morava-Vardar corridor, had settled on that plateau.

*Halos and Glasinac*

An expansion of iron-using peoples from Illyria eastward along two lines can scarcely be denied. It brought to Macedonia<sup>5</sup> and Bulgaria<sup>6</sup> antennae swords, spectacle brooches,

*Invasion from Illyria*

<sup>1</sup> *LAAA.* xii (1925), pl. XIX, 12.

<sup>2</sup> *Ant.* J. vii (1927), p. 48.

<sup>3</sup> *BSA.* xviii, p. 26.

<sup>4</sup> They are found on the Drina at Radaljska ada and Perinograd; in the Una basin at Buzija; there are anomalous forms near Donja Tuzla and

Sanskimost, *WMBH.* i, p. 318; iv, p. 181; vi, p. 143; vi, p. 525; i, p. 182.

<sup>5</sup> Casson, *Macedonia*, pp. 141 ff., figs. 50, 51, 52, and 47; *PZ.* ix, p. 66.

<sup>6</sup> *Izv. Bulg. Arch. Druz.* iii, pp. 291 f.; *Izv. Bulg. Arch. Inst.* 1921-2, pp. 31 f.; pp. 76 f.; 1924, pp. 105 ff.

of bow safety-pins of type A''4, pottery with thumb-grip handles, and other bronze and ceramic types<sup>1</sup> that seem at home in Carniola and Bosnia. Just the same types, save for the antennae sword, were carried across Hungary and up the Maros.<sup>2</sup> Both groups of migrants inhumed their dead. This movement must be later than the 'Lausitz' invasion of Macedonia; but, if it form part of the general shift that brought the spectacle brooch to Greece, may go back to the tenth century.<sup>3</sup> It begins in a phase of culture intermediate between that of Podsemel and the full Iron Age as seen at Glasinac,<sup>4</sup> and thus fixes the end of Period VI at about 900 B.C.

Yet those who want earlier migrations or infiltrations need not be altogether discouraged. At the beginning of the Bronze Age we saw that both sides of the West Balkans enjoyed a parallel culture with many elements in common. While the southern part was absorbing Mycenaean culture, the civilizations of Kličevac and Bijelo brdo were blossoming farther north. There a ceramic style, presupposing and copying the art of the goldsmith and the bronze-engraver, was developing, that, inspired by a *horror vacui*, was covering the vase surface with stars, swastikas, concentric circles, maeanders, and other patterns. The geometric art of Greece has much the same aims and presuppositions as that of Kličevac, and makes use of the same motifs in a different medium. And in both areas plastic animals were manufactured. And just as Geometric Hellas is thus linked with the Kličevac province, so its neighbour Bijelo brdo is allied with Villanovan Italy that is strictly parallel to Geometric Greece.

We have rather more to offer the Italian prehistorian who wishes to fill up gaps in the local record with drafts on an unknown 'Hungary'. Structures a little like *terremare* have actually been identified—on the Tisza—and the industry in them has in some cases truly relevant parallels on the Po. Other sites or other levels at the same site even yielded pottery of true *terremare* type. But, if it be thus not impossible to bring the Italici out of the Middle Danube basin, undiscovered intermediate stations have to be interpolated west of the Danube. The swords of Keszthely type, Ao, found in Italy do denote an incursion from West Hungary but, as they accompany unburnt

<sup>1</sup> The shield bosses, ewer-pendants, stamped circles on gold leaf, &c., all have Illyrian analogies.

<sup>2</sup> *Supra*, p. 388.

<sup>3</sup> The parallel movement eastward

seems to have reached the Maros at a much later date.

<sup>4</sup> Since no Glasinac swords are found in Macedonia.



bodies, can hardly belong to *terramaricoli*. The *terremare* bronzes have far closer links with the North Alpine zone.

We have again in Slavonia ceramic forms that, in structure and decoration, seem native, but yet agree closely with the Villanovan types of Este 1 and Benacci 1. For the Villanovan bronze industry, however, this part of the Danube basin offers no actual prototypes. In North Hungary, as we saw, Benacci types of metal vessel have actually been found in abundance and must in part be local products, but North Hungary is not Slavonia. Yet even the Bijelo brdo pottery presupposes an extensive use of metal vases. From the Slovakian mountains to the North Balkans Hungary really constituted a unitary province; the products from its several parts were continually being interchanged; even Bijelo brdo ceramic types are found as far north as County Pest. In the confusion induced by the Lausitz invasion in Period VI, some of the common traditions of the region might well have been carried into North Italy as into Hellas by those pushed aside by the northern intruders, to be fertilized in the peninsula by new models brought from the East Mediterranean coasts.

*Villanovans*

We should be loath to mislead the investigator with illusory hopes. The difficulties of according a priority to any Hungarian industry have been sufficiently emphasized. By raising the dates of the Bijelo brdo culture as required by the above hypothesis we are left with a terrifying gap. And if we admit an east to west movement out of Hungary at the beginning of Period VI we are obliged to recognize a strong current in the contrary direction at the end of that period; the diffusion of Italian and Illyrian types found in abundance along the western ranges, more sparsely in West Hungary, and just sporadically up the Maros, is the result of an irreversible process.

*Cautions*

But this book is not a treatise on prehistoric nationalities. Its aim has been to study the function of the Danube in the creation of European culture. We have seen that for over two thousand years it formed the channel by which the influence of the higher civilization of the East Mediterranean basin, including Anatolia and Syria, was transmitted to the barbarian north and even distant Britain. By the first millennium it no longer fulfilled this role. On the contrary, barbarian destroyers were travelling down stream towards Troy and Macedonia.

## EPILOGUE

*Danubian civilization rooted in the south-east* THE Danube valley received the first elements of 'neolithic' civilization from the south-east, becoming a part of a great cultural province that embraced the Aegean and Western Asia Minor. The slow spread of Danubian peasants eventually carried this primitive neolithic culture to Galicia, Eastern and Central Germany, and down the Rhine to Belgium and North France. But owing to the survival of epipalaeolithic elements, rooted in Předmost, Danubian culture possessed from the first an individuality of its own, and it soon began to react upon the world south of the Balkans.

*Reactions on Greece* Even during the first half of the third millennium B.C. there are indications of an infiltration from the Danube basin both into Macedonia and into Central Greece. But that only cemented the links with the Aegean without arresting the northward spread of cultural elements. In our second period the idea of polychrome decoration—perhaps painted vases too—and *pintaderas* were borrowed from Thessaly I, while Mediterranean and even Red Sea shells, copper trinkets, and metal vases (known only through clay imitations) were imported up the Danube. The Danubian II culture that thus arose in Hungary again spread northwards to Eastern and Central Germany, and reached the highland zone round the headwaters of the Danube. Parallel movements farther south were affecting both the Illyrian highlands and Transylvania.

*Cultural unity of the Balkans* That provoked a further reaction on the south. At the end of Period II, crusted ware and other 'Danubian' elements were introduced into Thessaly at a date still well within the limits of the third millennium. For a long time the northern and southern slopes of the Balkans were united in a single cultural province. At the same time the influence of the south-east was intensified as Troy II grew in wealth and power. And so Period III witnessed the multiplication of Trojan, Cypriote, and Syrian imports, marked by ear-rings, pins, and daggers, and the settlement on the Tisza and the Middle Danube of people manufacturing pottery of a definitely Anatolian character (Perjámos, Tószeg, and Gerjen) or at least decorating their vases with Cypriote motives (Slavonia). And the imported bronzes and the pot-forms are correlated by their distribution not only with gold-washings in rivers flowing from Transylvania, but with copper deposits in the Alps and Slovakia

*Penetration from Troy*

and hypothetical tin-washings in Bohemia. They would mark the advent of oriental metallurgists who first used the grooved hammers found in ancient mines and workshops of a rather later date.

But during Period III the Danube was suffering from incursions from outside, or at least reactions from epipalaeolithic hunters dwelling on its borders. The Nordic cultures, impregnated though they be with native Danubian elements, nevertheless mark the advent of new peoples. Whether these came in the last resort from Scandinavia or South Russia, they introduced a more pastoral manner of life, suited to the dry conditions then ruling, the sheep dog and perhaps the oriental horse, a whole series of new weapons, notably the battle-axe of stone or copper, and the custom of building a mound over the grave. The Michelsburg and pile-dwelling cultures that arise simultaneously on the western frontier borrowed nearly all their cultural equipment from the Danubians, though certain Western traits may be suspected. And then came the Beaker-folk who established trade connexions between Danish amber, Bohemian tin, and the Adriatic and, under impulsion from Nordic barrow-builders, first linked Great Britain to Central Europe.

*Nordic  
incursions*

Just at this time, the end of Period III, Troy II was sacked. The metallurgists who were collecting gold in Hungarian rivers, mining copper in Slovakia, or washing tin in Bohemia, must produce for home consumption, since their original market had been destroyed. In the native Bronze Age culture that thus arose on an Anatolian foundation Aegean inspiration was still effective. But during Period IV it was not transmitted up the Danube but across the Brenner in connexion with the amber trade. The clearest proof of it was the imitation of a Vapheio cup belonging to the sixteenth century.

*Junction  
with  
Britain*

*Results of  
the fall  
of Troy II*

With the resurrection of Troy about 1600 B.C. Aegean influence begins to affect the Middle Danube once more and is reflected in the adoption of the sacred ivy-leaf pendant, the introduction and local imitation of North Syrian and Cypriote types of battle-axe (B<sub>2</sub> and B<sub>3</sub>), perhaps also of rapiers and the Early Mycenaean pulley pattern that was later used to decorate sword hilts. At the same time, the barrow-builders of the western mountain ranges, now in possession of bronze, were receiving as an incident of the amber trade translucent glass beads and, soon, Mycenaean rapiers of L.M. III form (Co).

*Revival of  
Aegean  
trade*

*Reactions  
on the  
Mediterranean*

But in Period V reactions towards the Mediterranean were again beginning. The foundation of the *terremare* in the Po valley is attributed to one migration from the Middle Danube basin at the beginning of the period. The similarity between the pre-Mycenaean pottery from Macedonia and contemporary wares of North Serbia and the Banat may also indicate more than a mere parallelism.

*The great  
migration*

Then with Period VI great migratory movements from East Central Europe, directed towards the mining regions of Slovakia and the Alps, set in motion ethnic groups, and their repercussions affected the Mediterranean profoundly. We cannot yet connect them except inferentially with the appearance of slashing swords in Greece and Egypt during the thirteenth century; but the later barrows of Halos seem to imply an extension of the Continental Tumulus culture to the South Balkans somewhere about that time, and the break in culture in North Serbia might reflect the passage of migratory hordes. By the eleventh century in any case, a band of people using pottery akin to the later Lausitz ware of East Central Europe had descended the Vardar into Macedonia. We detect the motives they brought in the proto-Geometric pottery of North Greece, while in the earliest Dipylon style we discover a kinship to North Serbian art of Period V. By 900 B.C. Macedonia was again invaded, this time from Illyria, and little, if at all, later migrants from East Hungary settled in Troy VII. We suggested further that one of the first southward pushes would have driven the ancestors of the Villanovans from Eastern Slavonia into Venetia and the Po valley. The parallelism between Villanovan Italy and Geometric Greece would reflect the kinship between the Middle Bronze Age cultures of Slavonia and of North Serbia.

*Iron introduced  
up the  
Adriatic*

Thus as far as the Middle Danube was concerned its traditional relations with the Aegean were inverted completely in Period VI. Nevertheless south-eastern influence continued to reach Central Europe this time through Italy and Bosnia. Paste beads, fibulae like A3, &c., the first iron objects, must have come from this quarter, and a whole series of designs (e.g. the Hallstatt birds), techniques (open-work decoration), came from that corner of the Mediterranean where the secrets of the new metal were first discovered and at first jealously guarded. Before the end of Period VI, when the Benacci I civilization was already flourishing in Italy, the influence of the south was stronger than ever before, particularly in the

North Alpine zone. And hence it was transmitted in an attenuated form down the Rhine to Britain.

The pattern of our canvas is not, however, logically imposed by the facts themselves. On the contrary it is a subjective construction, only obtained by the adoption of a certain assumption. We have assumed the priority of the south-east, and interpreted our data accordingly as long as it was possible to do so without doing obvious violence to the facts. The assumption is reasonable enough and needs no defence here. But its use has brought us into conflict with highly qualified authorities.

*Assump-  
tions  
used*

We have had to assign a higher antiquity to the culture of Vinča I than even Stocký is prepared to admit. Menghin and most German scholars would locate the original focus of Danubian I culture still farther north. Similarly, Frankfort calls 'Danubian' elements in Greece and the Aegean that we treat as the ancestors of analogues north of the Balkans. We have equally attributed a much greater relative antiquity to Danubian culture as compared with the Scandinavian Nordic than would be generally accepted. This leaves in doubt the relation between Nordic and Danubian cultures during Period III, especially in Central Germany; the relation on the Oder is given stratigraphically.

*Vinča I  
perhaps  
dated too  
high*

*Reserva-  
tions on  
Scandina-  
vian-  
Danubian  
synchron-  
isms*

Similarly, we have given Tószeg A a priority over Marschwitz and proto-Aunjetitz. But once again this relation could be inverted. Seger holds that the Marschwitz culture arose in Silesia, and the proto-Aunjetitz might well grow out of it with the addition of Bernberg and Bell-beaker elements. Quite a number of Tószeg A types might just as well be derived from this Bohemian-Moravian complex, as vice versa. Similarly, Tószeg B and Gáta might be due to an extension southward of the Aunjetitz province, such as Kossinna suggested. And then the dating of the Hungarian urnfields could be reduced to bring them into line with the Lausitz and North Alpine groups of Period VI. By this means the puzzling gaps in South Hungary would be closed up.

*Relations  
of Tószeg  
and Aun-  
jetitz  
reversible*

Conversely, we have only assigned Bijelo brdo a temporal priority over Villanova in response to the clamours of Italian archaeologists, and our treatment of fibulae and slashing swords has been designed to meet the needs of Aegean prehistorians. While the two incursions into Macedonia and the invasion of the Troad are certain and irreversible, the similarities between Kličevac and the Dipylon may well be due to parallelism in time; that indeed is Vassits' view.

*Ambigu-  
ous  
Aegean  
relations*

*Reader must judge the facts* We hope that in the foregoing pages we have set out clearly the facts that the reader may himself interpret. We have tried to say what was found, where and with which associates, and to consign to a separate paragraph any interpretation of these data. And thus we hope that our account will be of use, however wrong and perverse our conclusions may be.

## PLATES I-XV

PRINCIPAL BRONZE TYPES REFERRED TO BY FIGURES



Plate I. DAGGERS

*Series A.*

- A1. Round-heeled dagger of Aunjetitz type, see *Fig. 133, d*, Period IV.
- A2. Bronze-hilted dagger of Italian type, hilt and blade cast separately, Period IV.
- A3. Local imitations of A2, hilt and butt in one piece, see *Fig. 143*, Neuenheiligen, Periods IV and V, phase B.
- A4. Bronze-hilted short-sword, derived from A3, see *Fig. 147, 1*, Hajdu Sámson, Period V.
- A5. Bronze-hilted dagger, derived from A3, Tumulus Bronze Culture, barrow of Böttingen, Wurt., Period V.
- A6. Short-sword derived from dagger A1, Swiss type, Broc, Period V.

*Series B.*

- B1. Ogival dagger with broad butt, four rivets and midrib, barrow 3, Mühlthal, Upper Bavaria, Period V, phase B.
- B2. Ogival dagger with two rivets, barrow 1, Leibersberg, Upper Bavaria, phase C-D.
- B3. Flat dagger with two rivets, Tachlovice, Bohemia, Period V, phase C2, with sword B3.
- B4. Dagger with flanged tang, derived from Mycenaean type, barrow at Riegsee, Upper Bavaria, Period VI, phase D.

# PLATE I

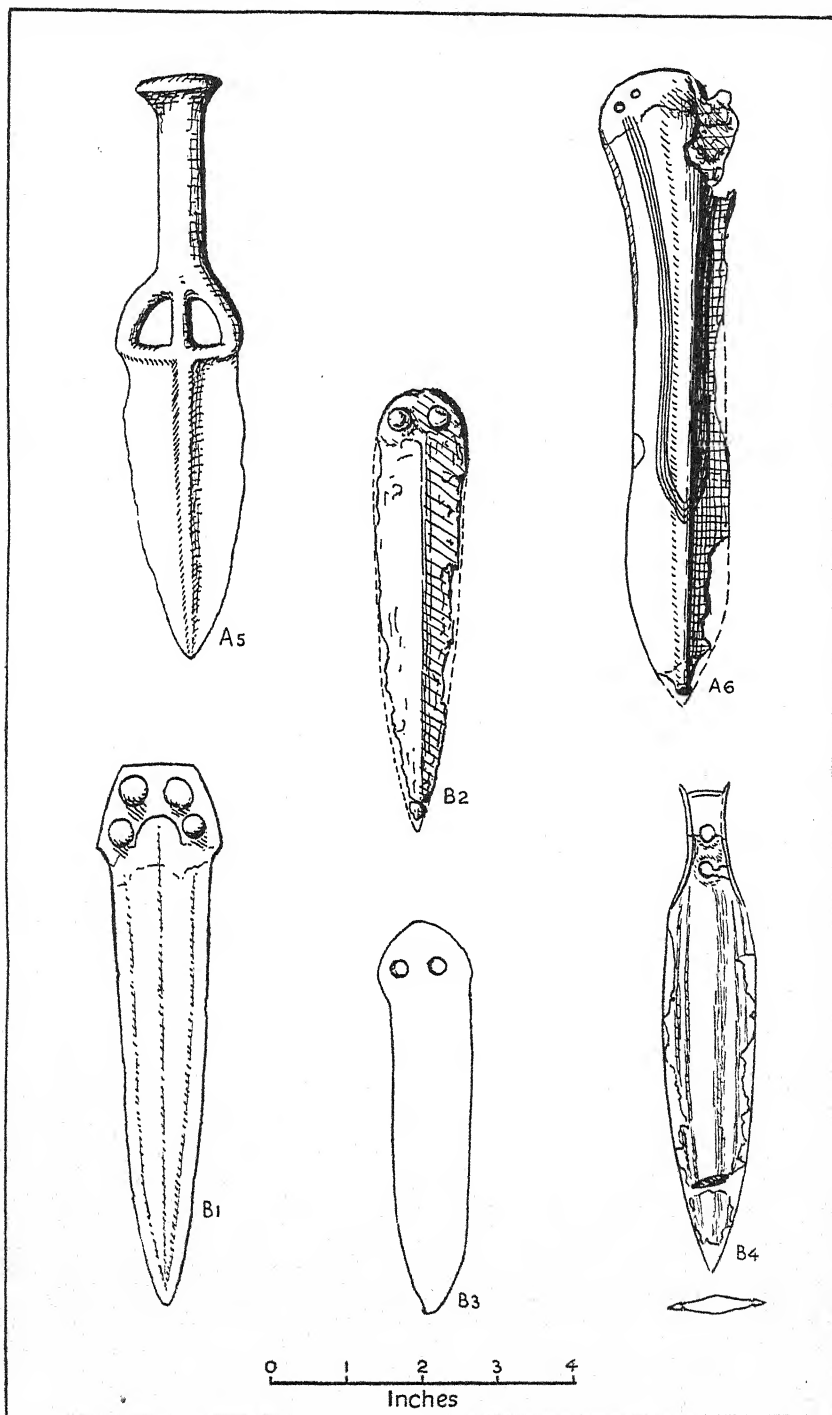


Plate II. SWORDS AND RAPIERS

*Series A.*

- Ao. Sword, slightly swelling near butt of blade, related to dagger A6, Keszthely, West Hungary, Period V.
- A1. Rapier with broad base and six rivets, Upper Bavaria, Period V, phase B.
- A2. Rapier with four rivets, barrow at Velka Dobra near Prague, Period V, phase B or C.
- A3. Rapier with tapering butt, hoard of Rima-Szombat, N. Hungary, Period VI.
- A4. Rapier with prolonged tang, bent over, Period VI (not figured, see Déchelette, ii, *Fig. 61*).

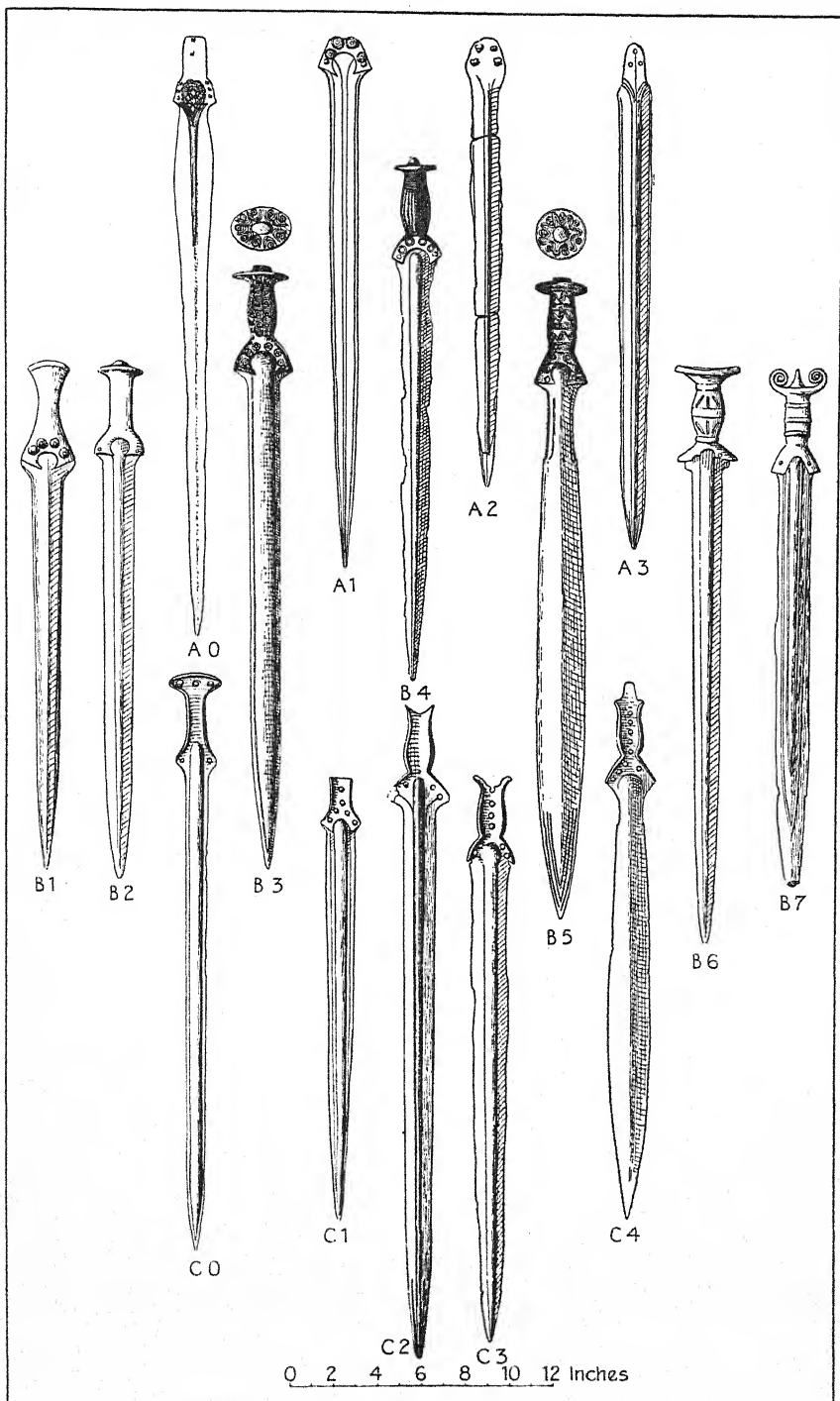
*Series B.*

- B1. Sword with solid grip, barrow at Haid, Wurtemberg, Period V, phase C1.
- B2. Sword with straight-sided grip, Rima-Szombat, type of phase C2.
- B3. Sword with octagonal grip, Tachlovice, transition from phase C2 to phase D.
- B4. Sword with pointed oval grip, hoard of Aranyos, North Hungary, phase D.
- B5. North Hungarian sword, Zsujta, Period VI, phase E.
- B6. Ronzano sword, Switzerland, Period VI, phase E.
- B7. Antennae sword, Switzerland, Period VI, phase E.

*Series C. SWORDS WITH FLANGED GRIP.*

- Co. Rapier of Mycenaean type, Hammer near Nürnberg, phase C1.
- C1. Rapier with concave grip, barrow at Smolenice, Slovakia, phase C1.
- C2. Sword of Kossinna's Germanic type, Dahmsdorf near Breslau, Period V.
- C3. Slashing sword, Aranyos, phase D with B4.
- C4. Slashing sword with leaf-shaped blade, cremation grave at Wollmesheim, Rhenish Palatinate, phase E.

# PLATE II



### Plate III. CELTS

#### *Series A. FLANGED CELTS*

- A1. Italian type with indent in the butt, not figured.
- A2. Aunjetitz type with pointed butt, Neuenheiligen, see *Fig. 143*, Period IV.

#### *Series B. WINGED CELTS*

- B1. Swabian flanged celt, Krafts 'grave type', barrow at Mägerkingen Period V, phases B-C.
- B2. Celt with medial wings, barrow at Mägerkingen, phases B-C with B1.
- B3. Celt with wings above the centre, barrow at Kbely, Bohemia, phase C.
- B4. Celt with terminal wings, late Italian type, barrow at Eglfing-Tauting, phase E.
- B5. Celt with terminal wings and ear, Period VI, Alpenquai Zurich, see *Fig. 203* bottom left.
- B5a. Celt with terminal wings and transverse blade, &c., winged adze, barrow at Mühlanger, Oberpfalz, Period VI.

#### *Series C. CONSTRICTED CELTS*

- C1a & C1b, Celts with constrictive wings from a hoard at Reitnau, Switzerland, Period V, phase B.
- C2. Celt with conjoined wings, barrow 3, Mühlthal, Upper Bavaria, phase B.
- C3. Bohemian palstav, barrow at Pivon, Period V (phases ? B-C).
- C4. Socketed celt with imitative ornament, Aranyos, Period VI with swords B4 and C3.

# PLATE III

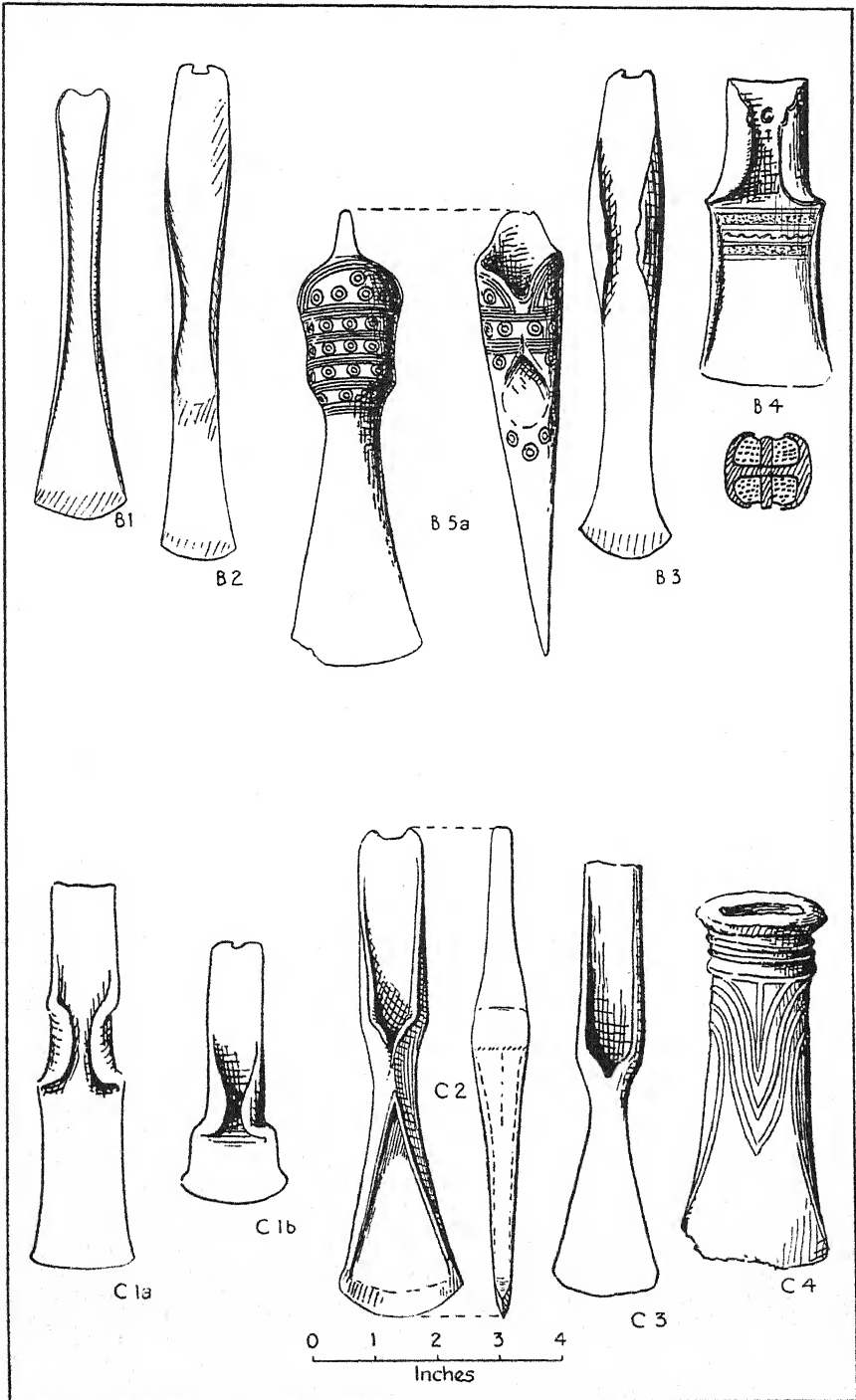


Plate IV. CELTS

*Series D.* PALSTAVS

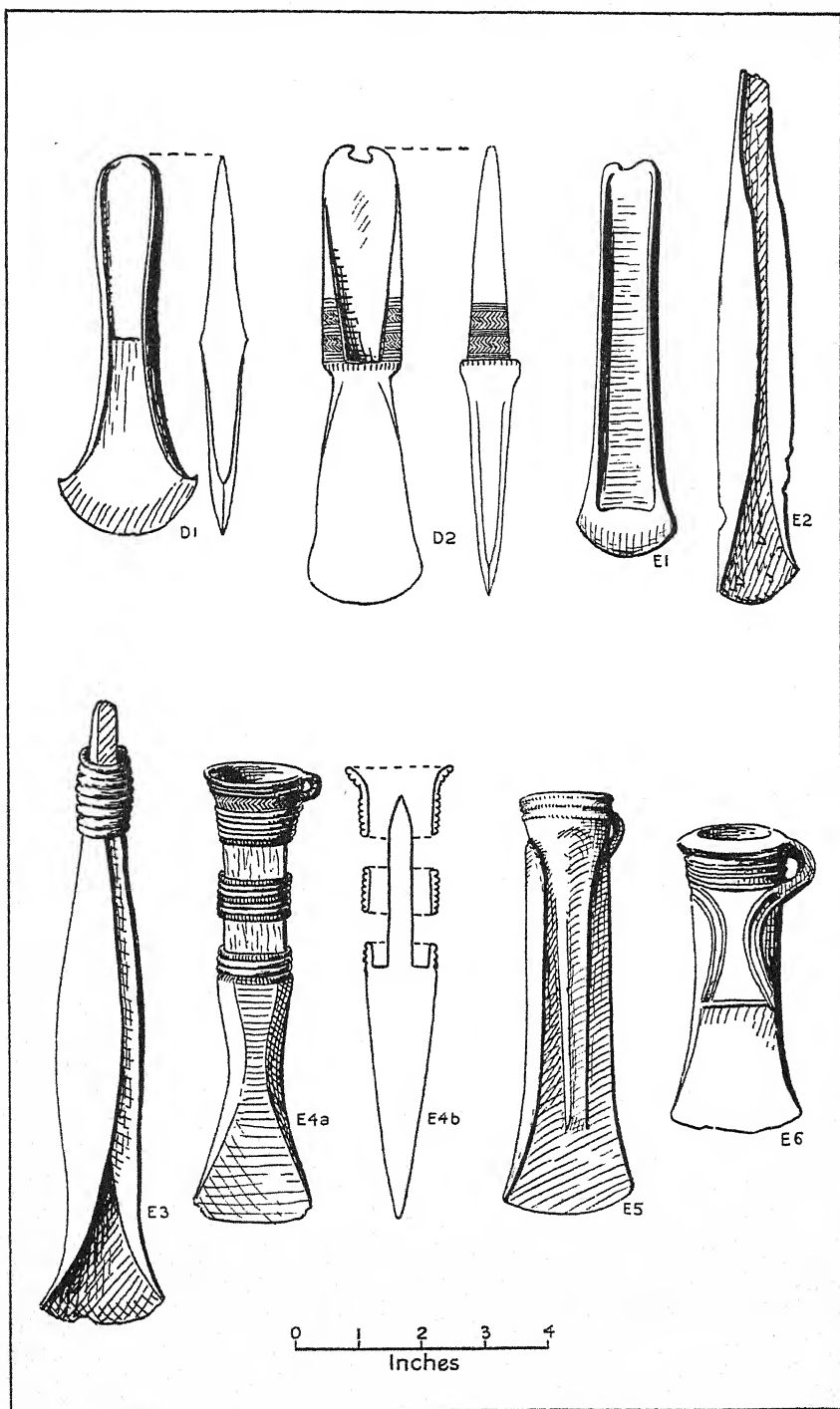
- D1. Celt of type A2 with rudimentary stop-ridge between flanges.
- D2. Palstav, barrow near Haguenau, Period V.

*Series E.* SOCKETED CELTS

- E1. North German flanged celt, barrow at Schimmelwitz, Period V, phase B.
- E2. Danish celt, Period V, phase B.
- E3. Celt with bronze collar, Denmark, phase B.
- E4. Socketed celt with saeptum still in place, Silesia (stray).
- E5. Danish socketed celt, phase C.
- E6. Socketed celt with imitation wing ornament, Aranyos, Period VI with C4.



# PLATE IV



*Plate V. RAZORS*

*Series A. UPPER DANUBIAN FORMS*

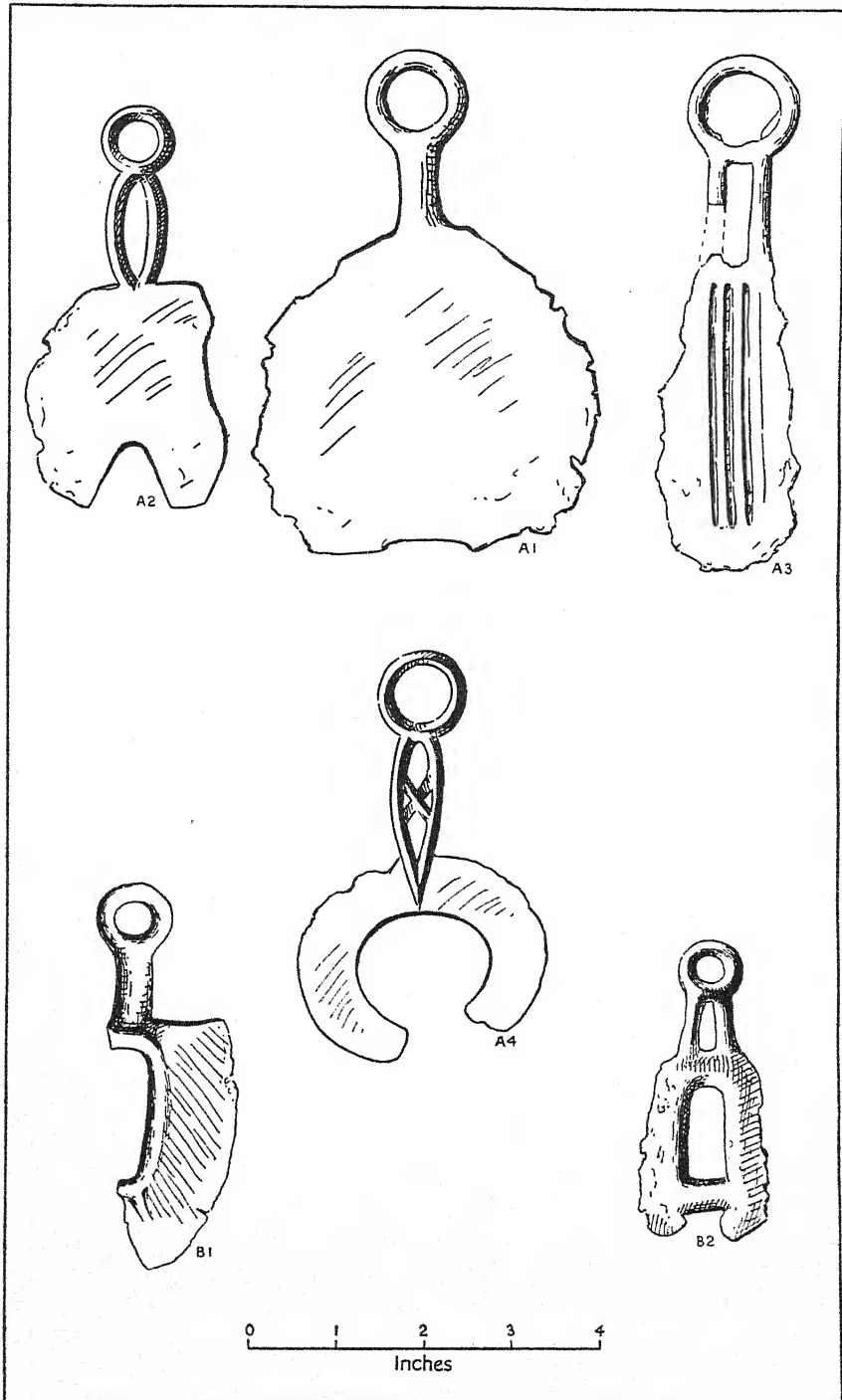
All are double-bladed.

- A1. Flat grave at Netovice, Bohemia, phase ? C2.
- A2. Barrow at Labersricht, Oberpfalz, phase D.
- A3. Barrow at Zběšice, Bohemia, phase ? D.
- A4. Swiss lake-dwellings, Period VI, phase E.

*Series B. ITALIAN FORMS*

- B1. Pilin, Hungary.
- B2. Hoard at Prestavlk, Moravia, Period VI.

PLATE V

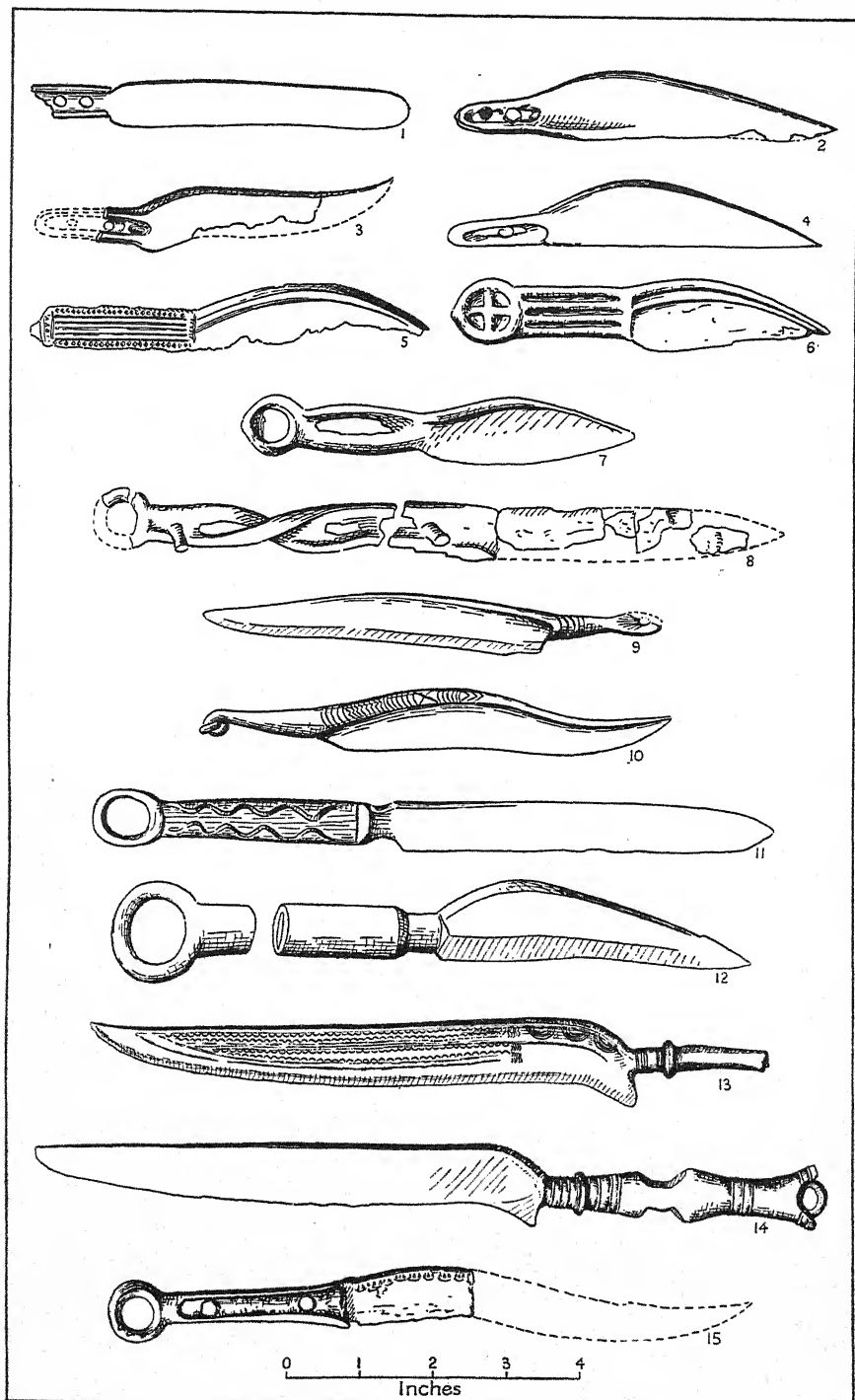


*Plate VI. SINGLE-BLADED KNIVES*

No reliable typology exists; dating by associated finds when any.

1. Graves at Apáti-pusztá, Hungary, ? Period V.
2. Barrow 8, Riegsee, Period VI, phase D.
3. Barrow 26 at Unter-Eberfing, Upper Bavaria, phase D.
4. Barrow at Labersricht, Oberpfalz, phase D (with razor A2).
5. Barrow at Nový Dvůr, Bohemia.
6. Barrow at Schützendorf, Middle Franconia, ? phase C.
7. Barrow at Nový Dvůr.
8. Barrow at Velká Dobruška.
9. Cremation grave at Heidesheim near Mainz, phase E (with fibula B3).
- 10, 13, and 14. Swiss lake-dwellings, phase E.
11. Rovio, Canton Ticino, with girdle clasp, 3, phase E.
12. Stadeln near Mainz, ? phase D.
15. Barrow 32 at Riegsee, Period VI, phase E.

# PLATE VI



## Plate VII. FIBULAE

### *Series A. ONE-MEMBER FIBULAE*

Ao. Prototype, grave at Gemeinlebarn, Lower Austria, Period V, phase ? B.

*Branch A Hungarian series.*

A1. Violin bow fibula with spiral catch-plate, Mosony-Szolnok, Hungary, Period V-VI.

A2. Bodrogheresztur, N. Hungary, type of Period VI.

A3. Győr: A3a is distinguished by a second spiral disk to replace the vertical coiled spring, Period VI.

A4. Aszód.

A5. Composite brooch, the small side spirals are separate pieces of wire fitting into the cross-pieces, Aszód, Period VII.

A6. Type influenced by B3, North Hungary, Period ? VI (or VII).

*Branch A'.*

A'1. Switzerland.

A'2. A1 with the spring coil lengthened to be about equal to the diameter of the catch-plate, Maria Rast, not figured. Period VI, phase E.

A'3. Harp-fibula, Statzendorf, Periods VI-VII.

*Branch A''*

A''1. Simple violin-bow fibula, giant version, barrow at Strbci, South Bosnia.

A''2. Simple arc fibula, not figured.

A''2a. North Italian ribbed variant: Swiss lake-dwellings, Period VI.

A''3. Bow fibula with widened catch-plate, Drenovi d6, Bosnia, Period VI.

A''4. Bow with a second twist behind the catch-plate; *Fig. 224b* shows a specially elaborate version of this type.

### *Series B. TWO-MEMBER FIBULAE*

B1. Scandinavian types, Period V, phase C.

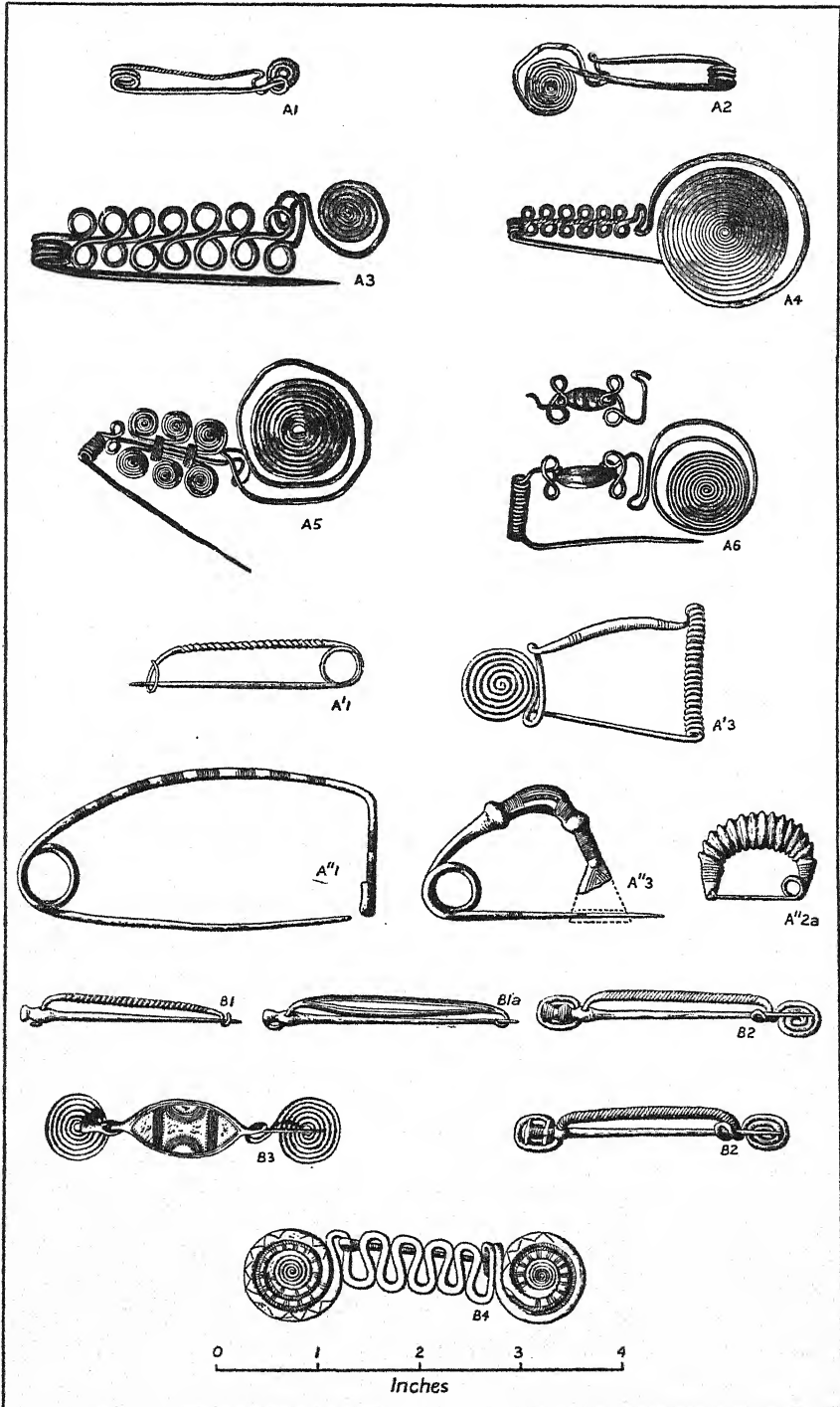
B2. Scandinavian-North German types, phases C-D.

B3. Heidesheim, with knife 9, Period VI, phase E.

B3a is distinguished from B3 by the interpolation of a figure-8 twist at either end of the leaf-shaped bow, not figured.

B4. Burladingen, Hohenzollern, phase E.

# PLATE VII





## Plate VIII. BRACELETS

- A1. Ingot-torque (see *Fig. 128*), Period IV. AB1, similarly shaped but of quadrangular wire that is twisted, not figured; but cf. G2.
- A2. Manchette armlets, smooth (see *Fig. 134*), Aunjetitz culture, Period IV.
- A2a. Manchette armlet, ribbed (see *Fig. 134*).
- A3. Massive penannular bracelets, like A3a, only smooth, not figured. Period IV (Aunjetitz culture).
- A3a. Gold bracelet, Leubingen, Period IV.
- A4. Wire, end twisted, Opatovice, Moravia, Period IV.

### HORIZONTALLY RIBBED PENANNULAR BRACELETS

- B1. Horizontally ribbed with rounded ends, Rákos-Palota, Hungary, Period V (with bracelets, C1 and D1, pin B5, pendants A2 and A3).
- B2. With widened ends, Hungarian-South-West German form, barrow 2, 1, Huglfing-Uffing, Upper Bavarian, Period V-VI.
- B3. Silesian variant, Lahserwitz, Period V.

### PENANNULAR BRACELETS WITH THICKENED ENDS (END-STOLLEN)

- C1. Rákos-Palota (with bracelet C1), massive, Period V.
- C2. Hollow, rounded on outside, barrow 6, Fischen, Upper Bavaria, Period V.
- C3. Hollow, triangular cross-section, barrow near Amstetten, ? Period V.

### BRACELETS AND ANKLETS WITH SPIRAL ENDS

- D1. Rákos-Palota, with bracelet B1, &c. This type was worn on the upper arm or on the ankles.
- D1a. Body as in D1, but two spirals at each end (see *Fig. 224d*), Fokorú, Period VI-VII.
- D2. Ribbon body, horizontally ribbed, Upper Bavarian, Period V.
- D3. Ribbon body, engraved, Oberpfalz, phase C or D.

### LATE PENANNULAR BRACELETS WITH THICKENED ENDS (END-STOLLEN)

- E1. Wojdal, Poland, Period V, with pin E3.
- E2. Ribbed ornament in an oval frame, barrow 8, Riegsee, with E3, Period VI, phase D.
- E3. Vertically ribbed all over, barrow 8, Riegsee, Period VI, with knife 2, bracelet E2, pin D10, &c.

### PENANNULAR BRACELETS WITH TAPERING ENDS

- F1. Round section, Unter-Eberfing, barrow 14; this specimen belongs to Period VI, but bracelets with the same section, but unornamented, are typical of Period V, phase B.
- F2. Rectangular cross-section, Mägerkingen barrow, phase C.
- F3. Twisted, barrow 2, Oderding, Period VI.

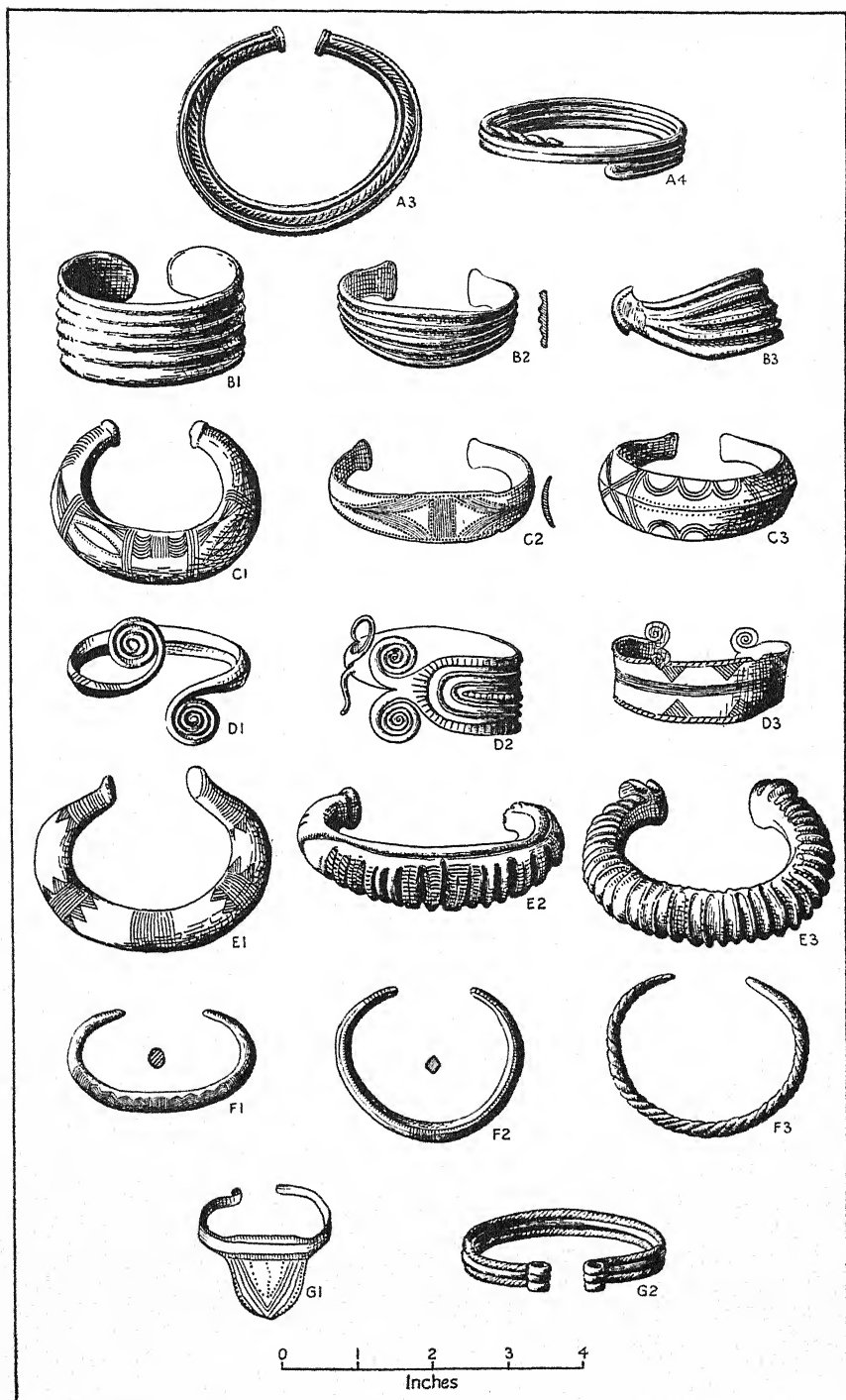
### Miscellaneous.

- G1. Barrow at Haid, ribbon, phase E.
- G2. Composite armlet or collar made by uniting three armlets of form A1 by a pin through the loops, Heidesheim, with fibula B3, phase E.

### ANKLETS. Barrows of Haguenau (*Fig. 170*).

- 1. Period V, phases B-C.
- 2. Phases C-D.
- 3. Phases D-E.

# PLATE VIII

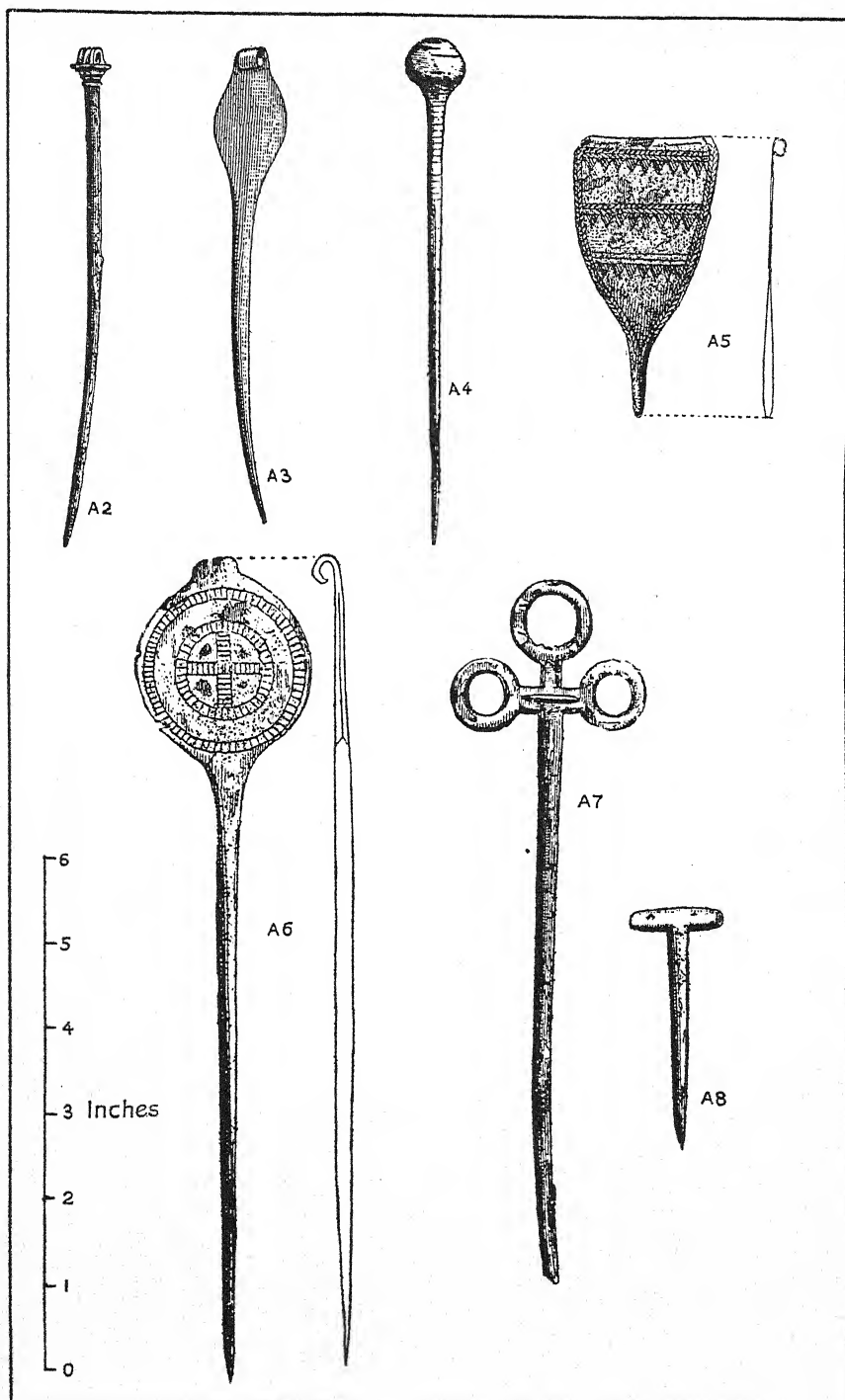


*Plate IX. PINS*

*Group A. AUNJETITZ PINS*

- A1. Knot-headed pin.
- A2. Typical Aunjetitz pin.
- A3. Racquet pin with oval head.
- A4. Bulb-headed pin, the bulb is pierced vertically.
- A5. Racquet pin.
- A6. Ornamented racquet pin.
- A7. Trilobate pin.
- A8. Crutch-headed pin. All from Aunjetitz graves of  
Period IV in order of antiquity.

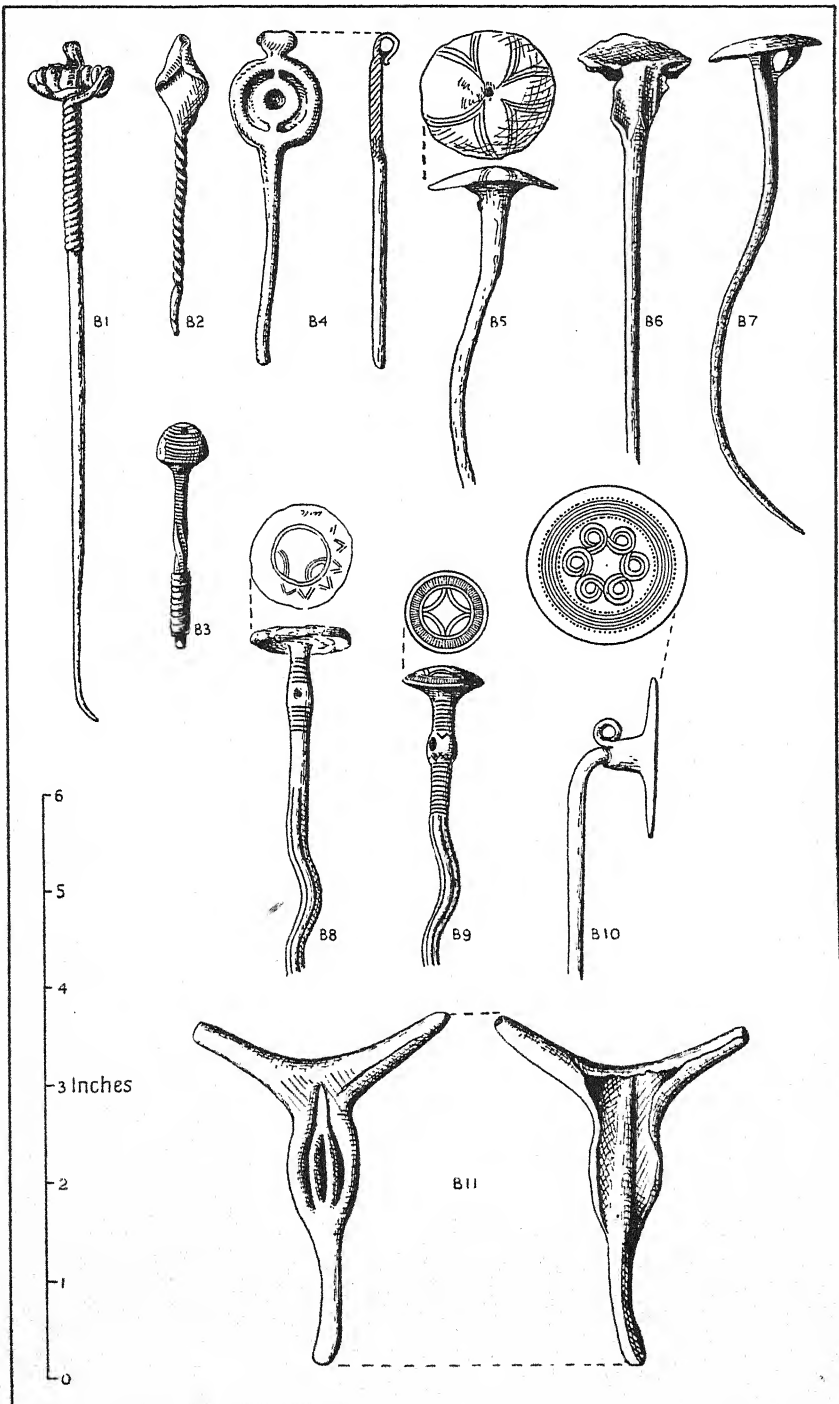
PLATE IX



*Group B.* PINS FROM HUNGARIAN URNFIELDS

- B1. Gemeinlebarn, Aunjetitz grave, Period V, phase B.  
B2-B4. Urnfield of Lovasberény, Hungary.  
B5. Rákos-Palota, with bracelet B1, &c. The head is vertically pierced.  
B6. Type of Bohemian tumuli, barrow of Hladomeř, phase ? C.  
B7. Urnfield of Zagyvapálfalva, North Hungary, Period VI.  
B8. Hoard from Szeged-Röszke, ? Period V.  
B9. Barrow near Amstetten, Lower Austria.  
B10. Barrow at Řepeč, Bohemia, Period ? VI.  
B11. Urnfield at Vršac, Banat, Period ? V-VI.

# PLATE X



*Group C. SOUTH-WEST GERMAN PINS*

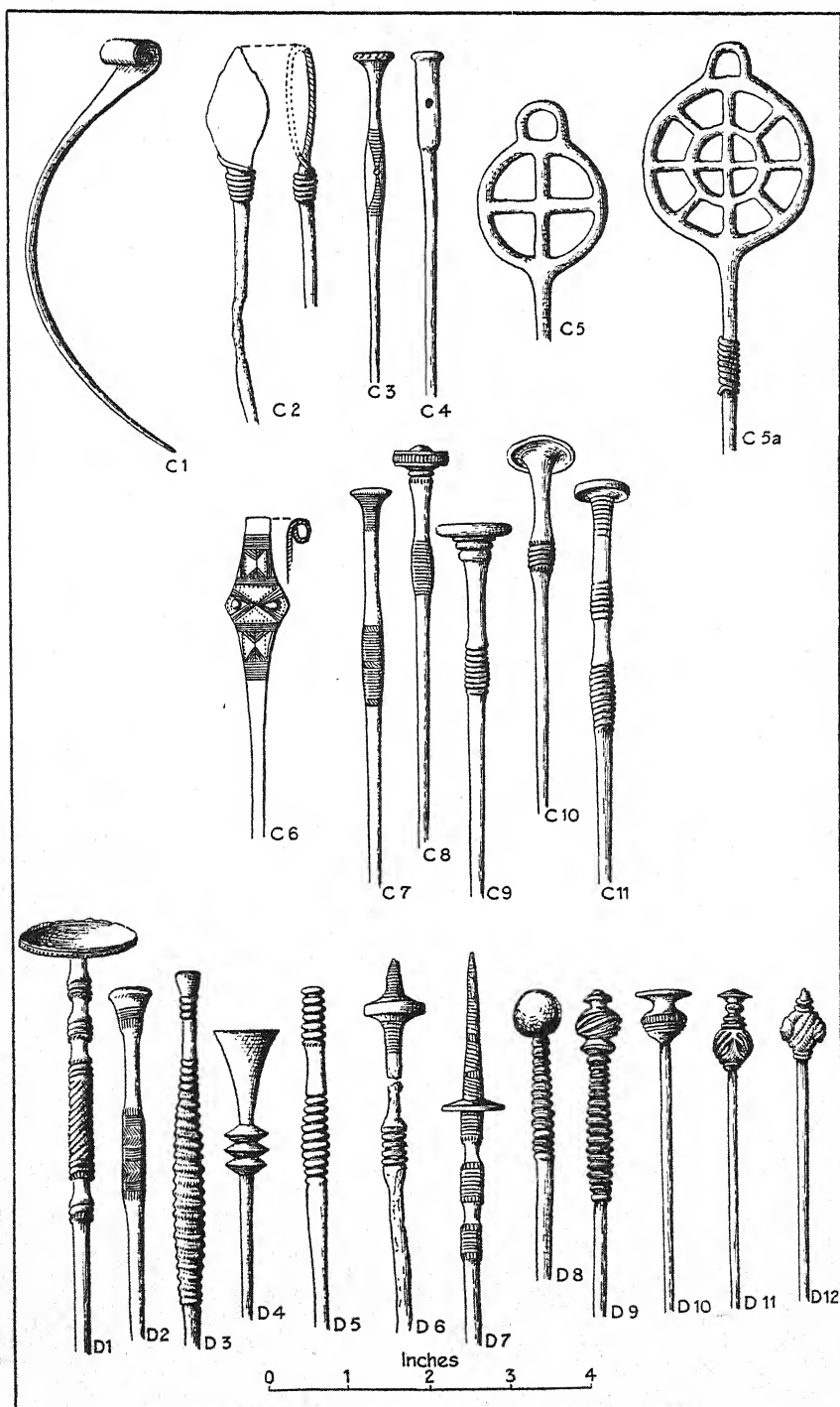
- C1. Adlerberg near Worms, Period IV.
- C2. Barrow near Haguenau, Period IV.
- C3. Barrow at Hundersingen, Period V, phase B. The form is typical of Wurtemberg.
- C4. Baierseich, barrow 25, 4, phase B.
- C5. Wheel-headed pin, Haid, phase C (or D).
- C5a. Elaborate wheel-headed pin, barrow at Pffronstetten, Wurtemberg.
- C6. Swiss type, Period V, Broc.
- C7. Alsatian type, phase B, barrow near Haguenau.
- C8. Branik, Bohemia, phase D.
- C9. Barrow at Kbely, phase ? C.
- C10. Barrow at Plavo, Bohemia, phase C-D.
- C11. Barrow at Zelený, Bohemia, phase C.

PINS OF THE LATE TUMULUS BRONZE CULTURE

- D1. Barrow at Chlum near Oparany.
- D2. Barrow at Hundersingen, Wurtemberg.
- D3. Barrow near Urach, Wurtemberg.
- D4. Barrow at Würtingen, Wurtemberg.
- D5. Barrow near Haguenau.
- D6. Bruck a/Amper.
- D7. Bavaria.
- D8. Riegsee, barrow 26, phase D.
- D9. Unter-Eberfing, barrow 14.
- D10. Riegsee, barrow 8, with knife 2, &c.
- D11. Barrow at St. Andrä, Upper Bavaria.
- D12. Barrow at Milaveč, Bohemia, with sword like B4, &c.



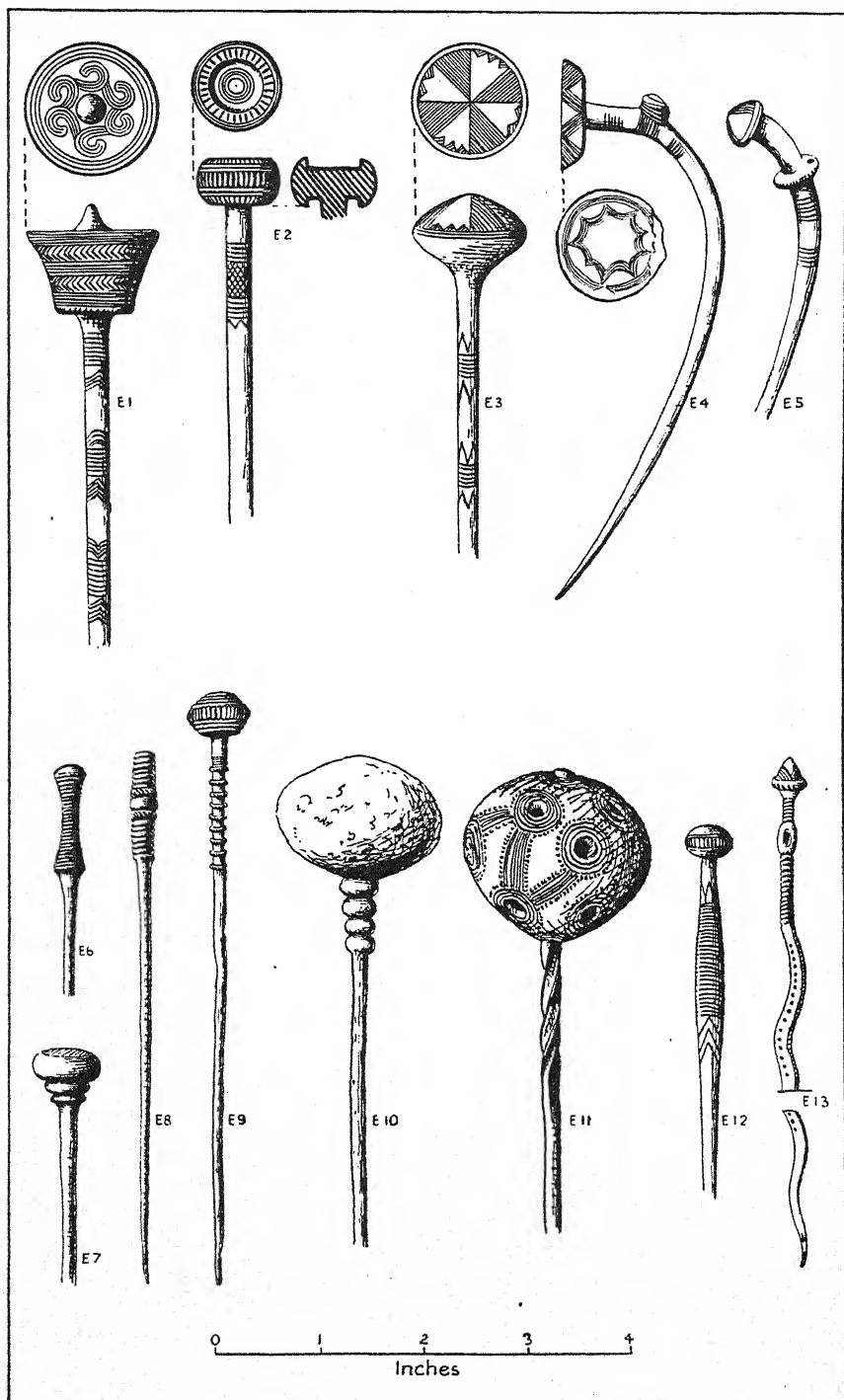
# PLATE XI



*Group E.* SILESIAN AND POLISH TYPES. TYPES OF LAUSITZ AND NORTH ALPINE URNFIELDS.

- E1. Grave at Namslau, Period V.
- E2. Gross Tschanz, Period V
- E3. Grave at Wojdal, Period V, with bracelet E1.
- E4. Silesian eyelet pin, Heidersdorf, Period V (the projecting spur is vertically pierced).
- E5. Transitional type, phase Cz.
- E6. Lausitz urnfield of Kuřetice, Bohemia, Period V (or VI).
- E7. Mostkovice, Moravia, later Lausitz, Period VI.
- E8. Knovíz grave at Přemyšlení, Period VI.
- E9. Poppy-headed pin, cremation grave at Egg near Zurich, phase D.
- E10. Globe-headed pin, cremation grave, Weinheim, phase E.
- E11. Swiss lake-dwelling type, phase E.
- E12. Barrow at Altdorf, Middle Franconia.
- E13. Pile-dwelling on L. Starnberg, Period VI, phase E.

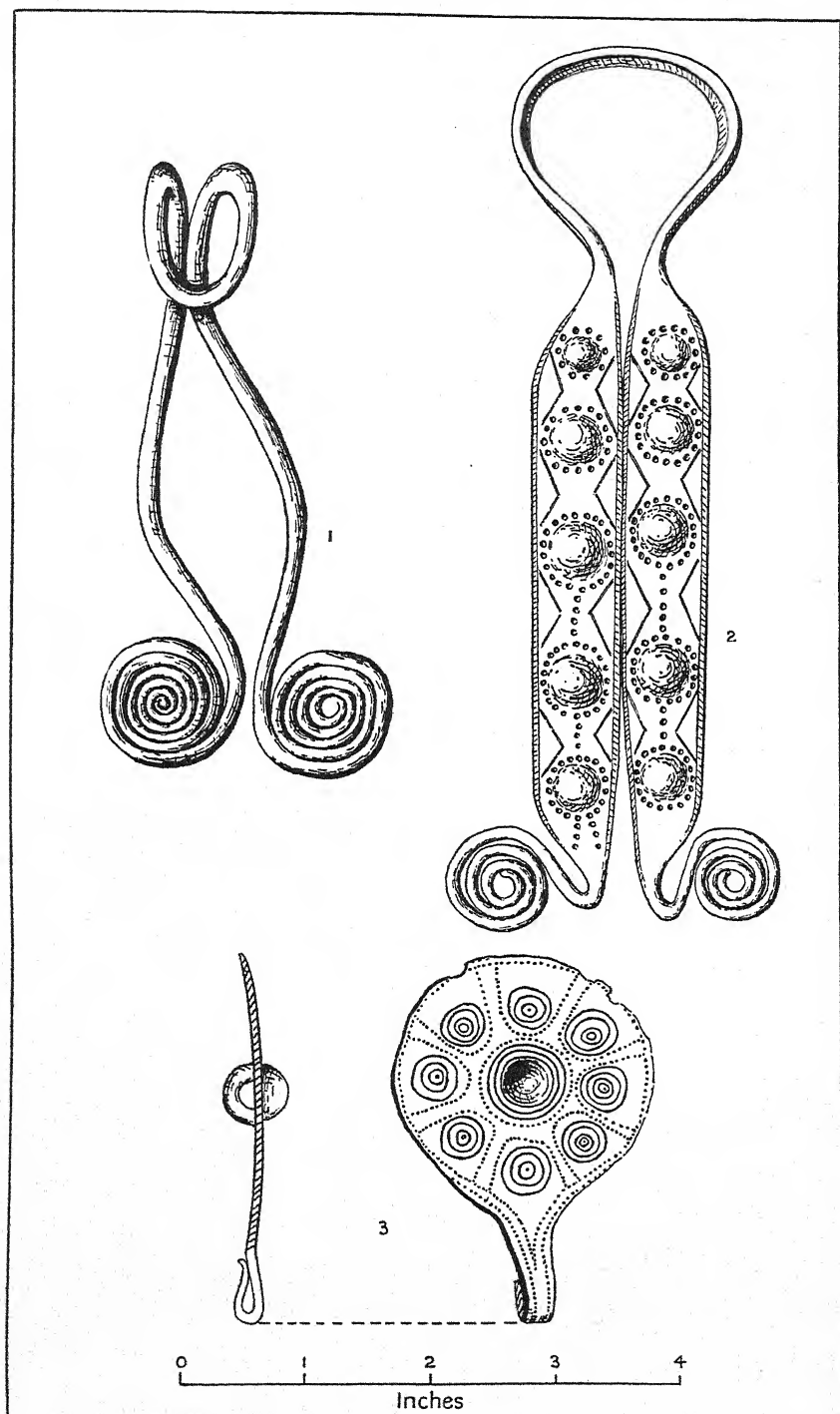
# PLATE XII



GIRDLE CLASPS

1. Barrow at Eglingen, Wurtemberg, Period V.
2. Barrow at Wilsingen, Wurtemberg, Period V.
3. Urn grave at Rovio, Period VI, with knife 11.

PLATE XIII



PENDANTS AND TUTULI

- Ao. Hollow disk perforated for sewing on girdle (button-sheath), see *Fig. 149, 12.*  
A1. Wire helix, Straubing, Lower Bavaria, Period IV.  
A2. Spiked tutulus disk with cast ridges and spike, Rákos-Palota, Period V.  
A3. Hollow tutulus, Rákos-Palota, Period V.  
A4. Disk with omphalos, flat rim perforated for sewing on belt, barrow 5, Mühlthal, Period V.  
A5a. Wheel pendant, Riegsee, barrow 35, Period VI.  
A5b. Unter-Söchering, barrow 1, Period VI.

DERIVATIVES OF THE SACRED IVY LEAF

- B1. See *Fig. 149, 18*, Nagy Hangos.  
B1a. See *Fig. 151.*  
B2. Barrow of Nový Dvůr, Bohemia, Period V.  
B3 and B4. Urnfield of Zagyvapálfalva, Period VI.  
B5. See *Fig. 149, 26.*  
B5a. See *Fig. 149, 20.*  
B6. See *Fig. 149, 16-17.*  
B7. See *Fig. 149, 4.*

LATE BRONZE AGE TYPES

- Co. Flat disk with a loop on the back (button), not figured.  
C1. Urnfield of Grünwald near Munich, phase D.  
C2. Leaf pendant, Lazapatak, Hungary, ? Period VI.  
C3. Bohemia, Period ? VII.  
C4. Shield pendant, see *Fig. 209*, centre, Rima-Szombat, phase E.

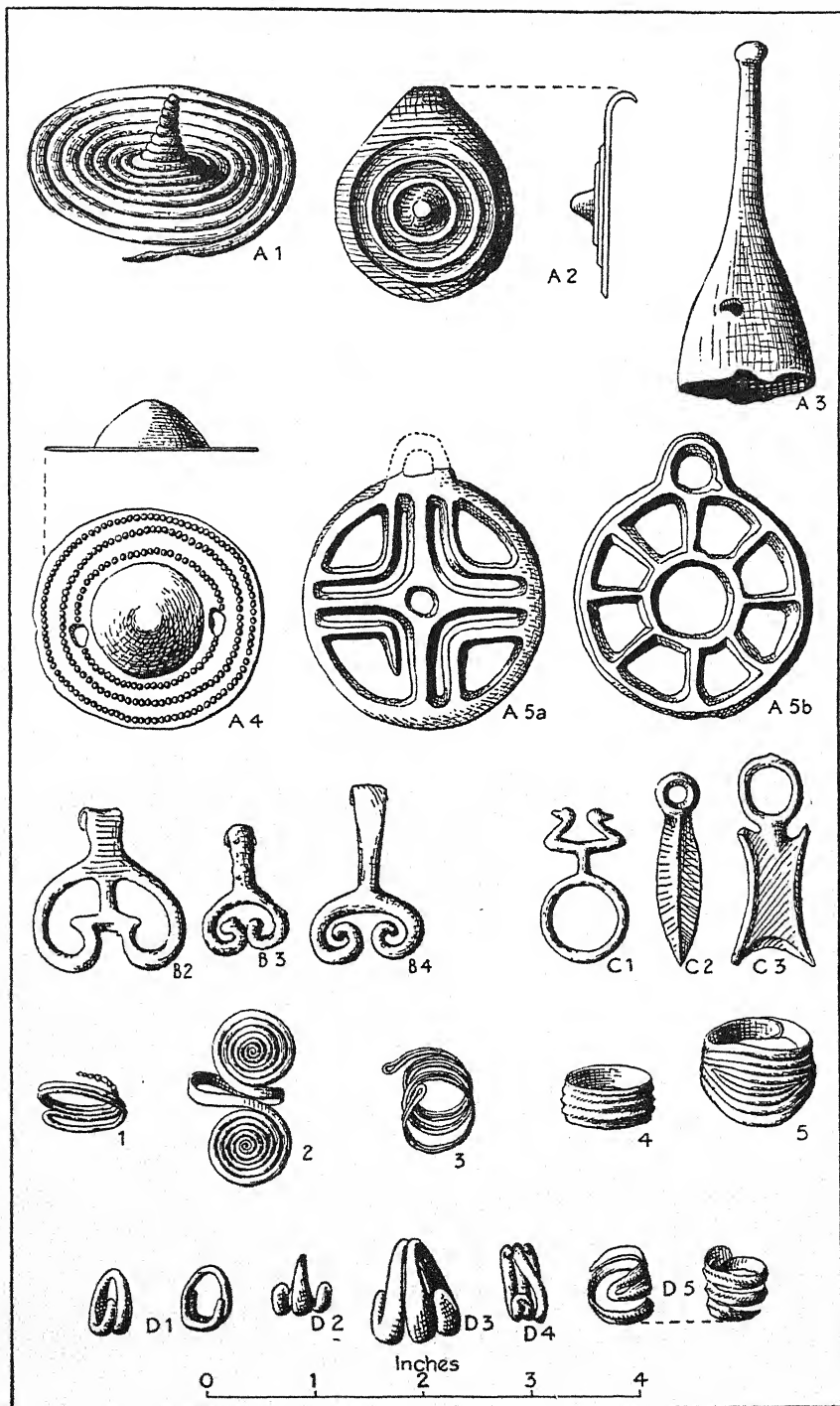
EAR-RINGS AND LOCK-RINGS

- Do. Wire 'basket' type, not figured.  
D1-D5 are all found in Aunjetitz graves.

FINGER-RINGS

1. Wire with twisted ends, Aunjetitz grave near Opatovice, Moravia, Period IV.
2. Ribbon-body and opposed spiral ends, characteristic of the Tumulus Bronze Culture, Period V, barrow at Repeč.
- 2a. Ends as in 2, but the body is wire and consists of two or more turns; not figured, characteristic of the Eastern urnfields in Period VI.
3. Gold wire ring, barrow at Hladomeř, Bohemia, Period ? V.
4. Horizontally ribbed ring from Haid, Period V-VI.
5. With a signet expansion, Period VI.

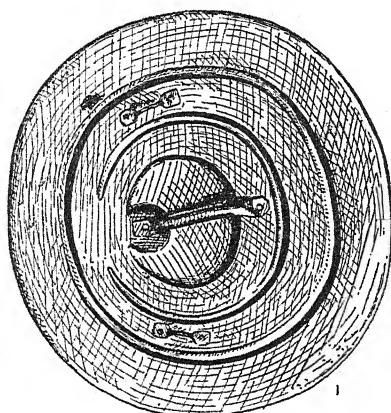
# PLATE XIV



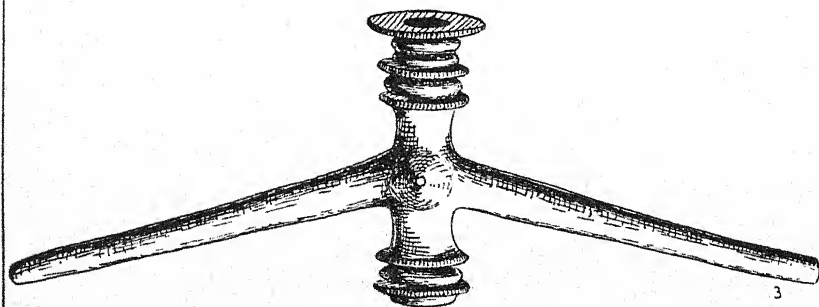
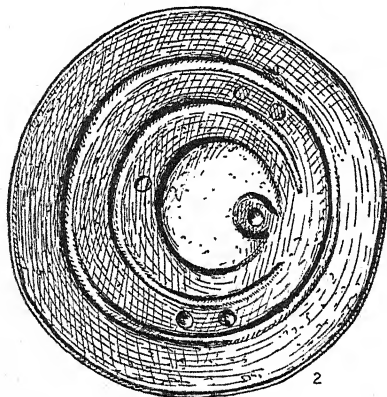


*Plate* XV. SHIELD FROM PLZEŇ AND HUNGARIAN  
MACE-HEAD FROM ŘEPEČ

PLATE XV



0 2 4 6 8 10 12  
Inches



0 1 2 3 4  
Inches



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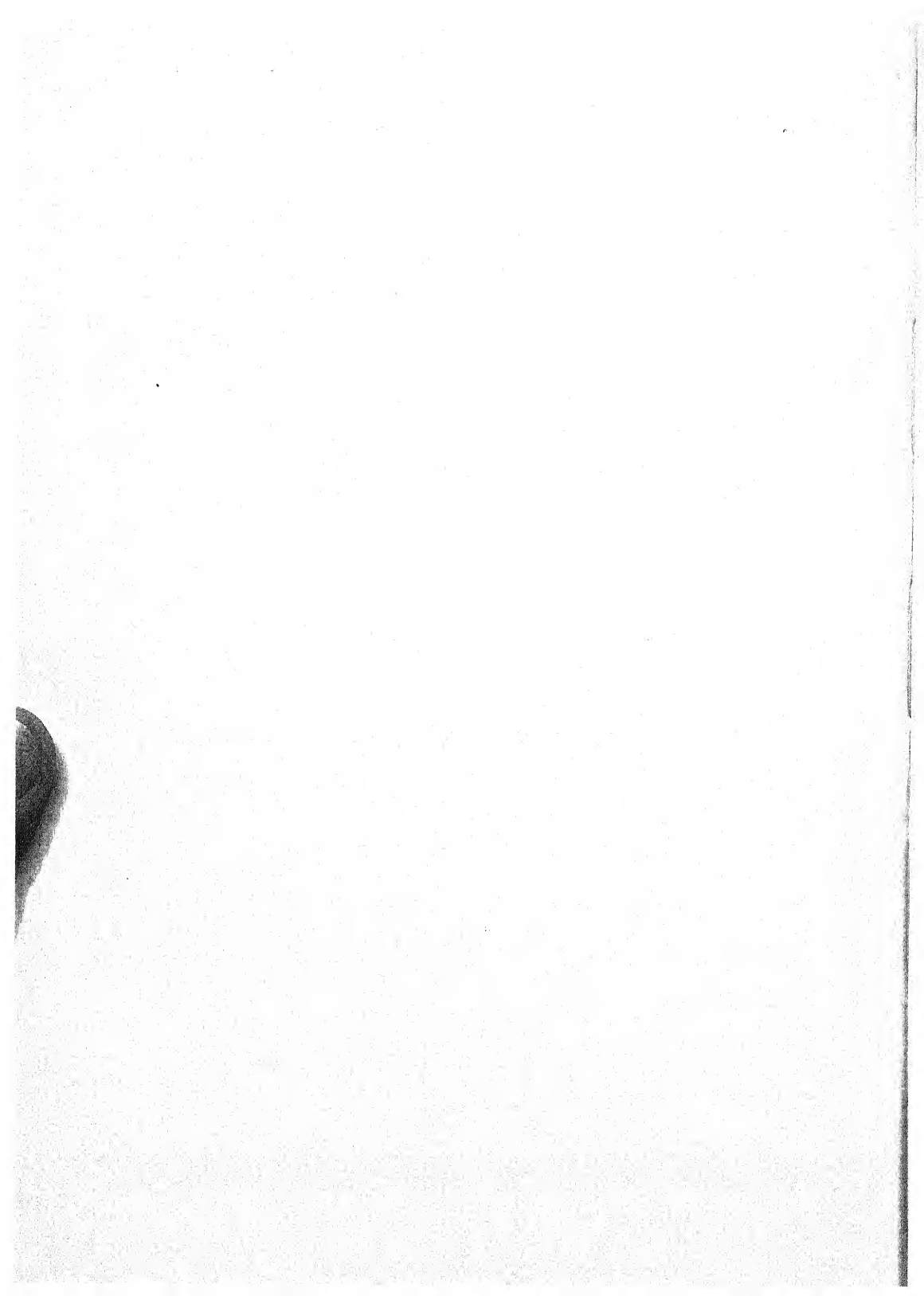
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